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THE Bulletin

OF THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS

Advanced Placement Programs in Secondary Schools

SERVICE ORGAN FOR AMERICAN SECONDARY SCHOOLS

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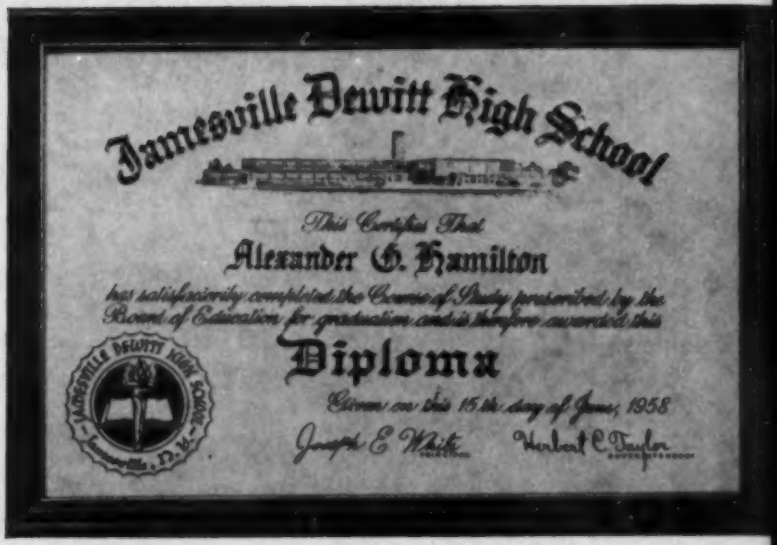
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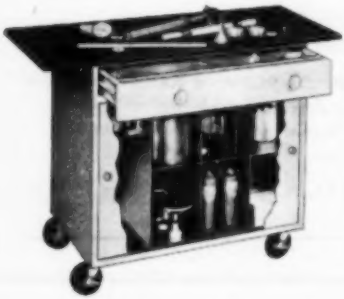

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PART I

Description of Programs

The Advanced Placement Program

DAVID A. DUDLEY

THE interest of the secondary schools in the Advanced Placement Program is apparent in the remarkable increase in the number of schools represented by our examinees. From an experimental 18 and 38 schools financed by the Fund for the Advancement of Education in 1954 and 1955, respectively, the number of schools has now grown to 100, and 200, and 350 in 1956-57-58, the years in which the College Entrance Examination Board has administered the Program. In May 1957, there were 2,000 students who took 3,700 Advanced Placement examinations. A year later, 3,700 students took 6,900 examinations. These students have fanned out to perhaps 300 colleges in the fall of 1958.

The Advanced Placement Program is a sound and a long-range movement. It has been received well by educators because it answers a need, because it is conservative at the same time that it is new, and because it is a normal growth in the evolution of American education. In the past half-century in the United States, we have achieved the comprehensive high school; we have approached our goal of twelve years of educational opportunity for all who want it or can benefit from it. Without relinquishing our Jacksonian gains, however, we can now turn again to a Jeffersonian ideal which allows for differences among abilities and offers opportunities according to capabilities and ambitions, with more attention than we perhaps have been giving in the immediate past to our very best students.

The basic philosophy of the Advanced Placement Program is simply that all students are not created equal. The more mature level of study and discussion and examination demanded in the Advanced Placement classes provides the stimulus which our superior students need if they are to receive the education best suited to their high potential—for the very fast student, like the very slow student, needs a pace different from the average.

David A. Dudley was the 1957-58 Director of the College Entrance Examination Board's Advanced Placement Program. Jack N. Arbolino has succeeded him as Director. Address: 425 West 117th Street, New York 27, New York.

Information about the Program may be obtained from Jack N. Arbolino, Director of the Advanced Placement Program, the College Entrance Examination Board, 425 West 117th Street, New York 27, New York. The College Board's Advanced Placement Program Syllabus provides course outlines in eleven subject areas: American history, biology, chemistry, European history, French 4, German 3 and 4, Latin 4 and 5, literature and English composition, mathematics (calculus and analytic geometry), physics, and Spanish 3.

Each syllabus is written by a committee of three college professors and two secondary-school teachers, the same committees which also write the College Board's Advanced Placement examinations. The courses are college-level courses, and the May examinations are three-hour examinations of the quality given by college professors as final examinations at the freshman-sophomore levels. The examinations are for the most part essay examinations—there is an hour of objective testing in some, and a half-hour of tape for the modern languages. In the construction of its examination, each committee of College Board examiners is assisted by a test consultant from the Educational Testing Service; and it is Educational Testing Service (E.T.S.), also, which administers the examinations for the College Board and appoints the readers for the examinations. There is always over-lapping of personnel between the reading and the examination committees to insure easy communication between the two groups. Each Chief Reader, for example, is a member of his Examination Committee or sits with it *ex-officio*.

In June the papers are read at a central reading site and under the supervision of a Director of Reading. The grading is on a college-level scale of 5, 4, 3, 2, 1, defined as high honor, honor, creditable, passing, and failure. College students, about 600 of them in 1958, have been asked to take the examinations along with the regular high-school students, and the college papers have served as points of reference in establishing standards. In the summer, E.T.S. sends to the college to which the student has been admitted the following materials for each subject: a student's examination grade, an interpretation of the grade, the examination questions, the student's course outline as submitted by the school, the school recommendation concerning the student, and the examination paper itself for the instructors at the college to re-read if they wish to do so. Each college, therefore, may base its decision concerning each student on a great deal more than merely the examination grade alone.

The cooperation of the colleges has been good. Some of the colleges, as might be expected, have been slow in realizing the values of the Program to themselves and to the common educational effort; but on the whole, the college response has been most encouraging. It is wise—and essential in the long run of course—for the colleges to give their wholehearted backing to the program. The Advanced Placement movement will bring to the colleges abler students, better prepared to do richer and more advanced work in the college years; it is a means whereby school

and college teachers may work together to strengthen American education. And the Program must have the nourishing support of the colleges if the schools are to make their extra effort to start Advanced Placement classes for their students and to maintain their standards at truly college-level heights. Professor Charles Keller, the College Board's first Director of the Program, has defined the Advanced Placement students as able and ambitious students. The same definition may be applied to the Advanced Placement teachers; and both the teachers and the students need and deserve the accolade of generously offered college recognition. They need it also if they are to receive the understanding and the backing of their communities.

In the spring of 1958, a survey of 360 colleges indicated 150 colleges granting appropriate placement to students who had taken Advanced Placement courses and who had performed creditably on the College Board's Advanced Placement examinations. Of the 360 colleges, 210 gave academic credit as well as placement. Some of these 210 colleges, to be sure, placed restrictions on the amount of college credit that could be earned in high school, but most allow credit without limit. Happily, among the earliest and firmest supporters of the Program are many of the outstanding colleges and universities in the country.

Of the 150 colleges now giving placement only, without the award of credit, many will surely add the award of credit in a very few years. The Program is still a new one, and the idea is a new one to many college faculties. Only a handful of colleges, after all, has had students in sufficient quantity for their impact to be felt to a large degree; for although it may be written proudly that seven colleges received more than fifty Advanced Placement students each in the fall of 1957, it must be modestly admitted that only thirty-three colleges received as many as ten students each in that year, and some of these students, of course, had not necessarily done well in their Advanced Placement examinations. Some of the newer colleges in the Program, therefore, jealous of their standards, have approached the students cautiously. They gain confidence in the Program as they observe the quality of College Board standards and student performance, as they become aware of its stimulating implications, and as they come to appreciate the rewarding effects of college credit granted to an eager and deserving secondary-school student.

A study of about twelve of our pioneer colleges which have had students in sufficient numbers for patterns to emerge, shows placement and credit granted in the fall of 1957, evidently without hesitation, to our "5" and "4" and usually our "3" grades—and credit granted or denied as individual circumstances and examination of accompanying material indicated in cases of other of the "3" grades and many of the "2" grades.

A major follow-up study of Advanced Placement students is planned for the future. In the meantime, follow-up reports have come in from a number of colleges and schools and have been universally encouraging. The Advanced Placement students do well in college; and those denied

proper placement quite naturally report at times that they are "bored" by the "repetition" of college work "below the level of my (Advanced Placement) high-school courses."

Most students, of course, take Advanced Placement courses in only one or two subjects. In order for a student to take calculus in the twelfth grade, after all, he must have completed trigonometry by the end of the eleventh grade, a demand which requires effort and planning by the student and his school beginning way back at the tenth or ninth or eighth grade. In a few instances, students have amassed enough credit in high school to earn the equivalent of sophomore standing upon entrance to college. There were about fifty of these in the fall of 1957. These fifty may thus reduce their undergraduate years from four to three if they wish to do so. So far, most of these students evidently do not plan to accelerate, preferring the four years in college. Some may later, of course, find themselves in a position to combine undergraduate and graduate work in a way which may shorten the total span for the higher degrees. Although such students should not be forced to accelerate, they should certainly be allowed to move faster than the average if they wish to do so. They are so far only 2½ per cent of our advanced placement group, a fraction of one per cent of our total college preparatory group. They are an important part of the intellectual leadership which needs better education if they—and we their neighbors—are to gain full benefit from their potential. The European masters of the Middle Ages, the writers of the Elizabethan Age, the political stars of eighteenth century America were men not held back by artificial restraints upon their pace of learning. Like Newton, some grew very fast indeed, encouraged by their teachers. They need not be pushed—for human beings apparently develop to individual capacities and at individual rates. But neither should they be jealously restrained. We inhibit a man's growth at our peril.

Most easy to observe at the present time is the effect of the Advanced Placement Program upon the participating schools. In the schools the effect is marked and has been enthusiastically reported by scores of superintendents, principals, teachers, students, and parents. The intellectual tone of a school is lifted by the recognition of scholastic achievement. Advanced Placement teachers report improved teaching in their other classes as a result of their added study, and the good ones feel real satisfaction in teaching the very able and the intellectually restless. Administrators and teachers report student response and capabilities far beyond their early expectations. Curriculum revisions and reviews of methods and aims have been set in motion. And administrators and teachers have been enthusiastic about the June school and college conferences sponsored by the College Board for discussion of Advanced Placement administration and courses, examinations and standards, for discussion of professional topics, and for discussion of any problems relevant to school and college education and articulation. Inquiries about the conferences should be

addressed to Jack N. Arbolino, the new Advanced Placement Program Director.

It is, of course, humanly easy to exaggerate the importance of a program in which one has been himself directly involved. American education has for many reasons arrived in its history at a moment of self-examination and change. In that process, however, the Advanced Placement Program has been a sound and influential force among the catalysts. The Advanced Placement Program is a fulfillment. And it is also the promise of a new direction in our educational growth. It is imaginative. And it is a re-affirmation of our faith that scholarship is a matter of high consequence.

The Advanced Placement Program Now Has a History

CHARLES R. KELLER

IT WAS four years ago, in late June 1954, that the first conference for school and college teachers of history was held under Advanced Placement Program auspices—the School and College Study of Admission with Advanced Standing we called it then. We were pioneering when forty-eight school and college teachers from twenty-seven schools and twelve colleges met at Williams College "to talk about advanced courses in history for which colleges will give advanced placement and/or credit, to discuss informally their programs and their problems, and to exchange information and ideas."

A group of school and college teachers talked freely and learned much from one another. Such familiarity bred considerable respect. "The Williams conference," I wrote, "was a rousing proof of the value of school and college relations at the *teacher* level." "What a wonderful group of people they were," one schoolman wrote. A retired member of the Williams College English department who saw the historians even called them "handsome." A college teacher commented, "I certainly gained a new confidence in the ability of the present participating schools to conduct advanced courses which are the full equivalent of college introductory courses." To his wife, who said unbelievingly, "But you seem to be enjoying yourself," a member of the Williams history department, usually cynical about and critical of conferences, replied, "I *am* enjoying myself."

A highlight of the conference was the appearance at one session of Professor Theodore Clarke Smith, professor-emeritus of History at Williams and the only surviving author of a volume in the original American Nation Series. Professor Smith had prepared a paragraph for the occasion which he did not get a chance to read but which I included in my report. He referred to the December 1897 meeting of the American Historical Association in Cleveland at which he had heard the report of the Committee of Seven on History in the Schools. Wrote Professor Smith:

Talk given by Charles R. Keller at the College Board-DePauw University Conference for School and College Teachers of History, in Greencastle, Indiana, June 27, 1958. Mr. Keller is Brown Professor of History and chairman of the Department of History at Williams College, Williamstown, Massachusetts. He served as Director of the College Board's Advanced Placement Program, 1955-57.

This committee recommended regularizing the instruction in history by establishing four units, one for each school year. It also discussed methods, entering a field hitherto wholly neglected. It was a notable document. It started colleges altering their entrance requirements to conform; it stirred schools into setting up "units"; it inspired men in all sorts of places to begin writing textbooks—hitherto non-existent, and presently had publishers out gunning for possible writers. So the game was on!

I then concluded my report with two questions: "Will anyone fifty-seven years hence remember the Williams Conference and the report which grew out of it? Is another 'game' now on?" Well, *four* years later we are remembering the 1954 meeting. And the Advanced Placement Program has developed in a way that few thought possible. The Advanced Placement Program has clearly demonstrated that it is a good program for able and ambitious students in both school and college and that it is more than just a program. It has affected curricular thinking, course planning, articulation of work done in school and college, communication between schools and colleges particularly at the *teacher* level, and the intellectual tone in schools and colleges.

During 1953-54 eighteen schools gave the first advanced, college-level courses. In succeeding years the number of schools went up to 38, then to 104, in 1956-57 to 212, and during the past year to 356. In most of the schools the advanced work takes the form of special sections of carefully selected, able, and ambitious students doing college-level work. In some schools, especially in the smaller schools, the advanced work is of a tutorial nature over and beyond a regular course.

Schools, teachers, and students have had interesting, challenging—even exciting—experiences with Advanced Placement Program work. In a speech at the North Central Association in March, the principal of the Ann Arbor, Michigan, High School, said, "The Advanced Placement Program has had a wholesome effect on our student body, our teachers, and the total school program, and it has the support of the community." I like the comment of a friend who was a very successful secondary-school teacher of history and is now a top man on a Foundation's totem pole.

> What I like best about the Program [he wrote] is that the process of selecting the "able student" is not done automatically. Or better stated, it is done where it should be done—in the schools; by those who should do it—teachers in those schools; on the basis of adequate data; and in a comprehensive democratic fashion, in that all students in school constitute the group from whom the selection is made. There are a great many other things I like about the Program, all of which I will disclose on demand, but I'll close with one. As a former high-school history teacher, I myself would have risen to this bait like a donkey to a bunch of carrots.

And a college freshman has written very maturely about his Advanced Placement work in school:

> Not only did Advanced Placement work permit me to begin my college studies without having to fumble with the fundamentals in the two advanced

courses I have, but it also oriented me both to a system of study and to an appreciation of what my immediate goals in studying should be. . . . It is disturbing to see other students who are willing and able to absorb concentrated advanced knowledge held back because they must spend half a year learning fundamentals that are rightly learned in high school.

The Advanced Placement Program has encouraged in the fields of school mathematics and science curricular rethinking which is almost revolutionary. It has aided those who want to have foreign languages studied before the ninth grade and who oppose the present, all-too-common school program of two years of one foreign language and two years of another. It has helped, too, those who believe that the analytical rather than the historical method should be stressed in teaching English and that good, clear writing and the mature reading of a few good books should be emphasized. A Program which seems to be concerned with the twelfth and thirteenth grades has had its effects back in the junior high schools.

In the field of history or social studies, however, I believe that, as a result of Advanced Placement Program work in American and European History, there has been little curricular rethinking on more than a local scale. Certainly nothing akin to the revolution in mathematics. Some good, advanced, college-level courses are being given in a number of schools with emphasis on selection among a great quantity of material, on analysis, and on interpretation. But no widespread movement to restudy the content of the social studies and the methods of teaching has developed. At the February 6-8, 1958, N.E.A. sponsored Conference on the Academically Talented, chaired by Dr. Conant, it was recommended by a group of which I was a member that "academically talented pupils should have one year of American History, one year of a history other than American, and one year of some other social study." But the surface was not much more than scratched. I say now at DePauw, as I did at the Northwestern History Conference two years ago, that we need a social studies or history commission to do something similar to the work which the Commission on Mathematics has done.

Let me return to developments in the Advanced Placement Program. In 1954 about 500 students took 900 examinations; the next year approximately 900 students took 1500 examinations; in 1956 the numbers were 1200 students and 2100 examinations, in 1957 there were 2100 students and 3800 examinations, and in 1958 there were 3800 students and 6800 examinations. There were no history examinations in 1954 and 1955, for I had been the chairman of a maverick committee which had recommended "no examination." In these two years a few students received advanced placement in history—and even credit—in colleges on the basis of school recommendations. Clearly, however, as the Program grew, examinations were needed. American and European History examinations have been given in 1956, 1957, and 1958—204 American

History and 59 European History in 1956; 424 and 130 in 1957; and 832 and 243 in 1958.

The present is not the time to discuss in detail the examinations, which are only *one* part of the Program, but I will say that the examination committee in history, now composed of three college and two school teachers, have endeavored to prepare college-level examinations. As the committees have worked, they have had in mind that statement from Sir Richard Livingstone's *The Future of Education* which appears in the American History section of the familiar "acorn booklet": ". . . [to the student] facts and theories are . . . counters with which he learns to use his brain; . . . to argue a case and weigh evidence, to distinguish the relevant from the irrelevant, to seize the point of issue, to arrange his thoughts and marshal facts to support a theory, to discover when a statement is proved and when it is not, to reason logically and express himself clearly —in fact to play the great game of the intellect. . . ."

I am revealing no great secret if I say that in May the Advanced Placement examinations in both American and European History were taken by Williams students who served as points-of-reference groups. The students liked the examinations and my colleagues liked them; the results showed that they were demanding, fair, and discriminating.

The first Advanced Placement students entered ninety-four colleges in September, 1954. Twelve colleges during the fall of 1953 had agreed to give credit and advanced placement to students who performed satisfactorily in advanced, college-level work in school and on the Advanced Placement examinations. Such action was needed to get the Program off the ground. Gradually, slowly it seemed and yet surprisingly fast it now appears, other colleges learned about the Program and now in 1958 many colleges give both credit and advanced placement, some give advanced placement only. In 1955 advanced placement students entered 138 colleges; in 1956, 133; in 1957, 201; in 1958 the number was more than 280.

A very few students have entered college as sophomores, and Harvard has issued a report on the thirty-one who received sophomore standing September 1957. For most of the students, however, the Program has meant curricular enrichment in both school and college, a diminished amount of repetition in college of work done in school, and an opportunity to take advanced courses in college, to dig more deeply into subjects, and then to have more exciting freshman and sophomore years than in the past.

I like the fact that the activities of the schools and the success of Advanced Placement students have led to increased curricular flexibility in the colleges. A new section in one college's catalogue is headed "Opportunities for Superior Students." It begins: "In order to encourage students of superior ability and attainment to undertake demanding academic programs, the College relaxes many of its ordinary requirements. It is the expectation of the College that an increasing number of students

will take advantage of the many opportunities to shape course programs of a particularly challenging and individual nature." The college specifically endorses the Advanced Placement Program, it gives both credit and advanced placement, it will permit students who do Advanced Placement work in high school to take extra courses in college and in summer school and thus to attain the A.B. degree in fewer than the normal four years.

The new flexibility extends into the sophomore year, too. Students may register provisionally in their majors; able sophomores may take honors seminars ordinarily open only to upperclassmen. An enlarged honors program is featured in junior and senior years.

I can speak with authority only about Advanced Placement students in history at my own college. Here is our experience over four years. In 1954 four students entered with credit and advanced placement in history—without examinations. Three of these students have just been graduated with honors in history, one with highest honors after writing the best thesis we have ever seen. The fourth student entered with credit and advanced placement in biology, too, and was graduated with honors in biology.

The next group of students was less distinguished. Two of the three who did Advanced Placement work in history were given credit and advanced placement. Again there were no examinations. One of the students given credit had a good freshman record and then transferred to the university in his home town. The second has taken a number of history courses, is a history major, but not an honors candidate. The student to whom credit and advanced placement were not given, mistakenly I think, has done very well in history, is a history major, and could be an honors candidate.

In the fall of 1956 four advanced placement students in history were in the freshman class. One had not had a real college-level course in school and did poorly—a grade of one on the examination. We did not recognize his work. He has taken two history courses and will be an American History and Literature major next year. The other three students received credit and advanced placement—examination grades 3 and 4, and this year all three will be honors candidates: one in history, the second in English (he had done advanced work here, too), and the third in physics (he had four advanced credits on entrance).

In the fall of 1957 when I returned to Williams, I talked with eight freshmen who had done Advanced Placement work in history in high school and had taken the examinations. The department gave credit and advanced placement to six of the eight—examination grades of 3, 4, or 5, advanced sectioning only to the two who had grades of 2 on the examinations. The history grades of the six students in advanced courses as freshmen were: C+, B; B, A−; A, B; B, B−; C, B−; C, B. The other two did not take history as freshmen but elected it as sophomores. Particularly noteworthy, I think, is the fact that four of the six students given credit

and advanced placement have registered as provisional majors in American History and Literature; the fifth is a provisional major in Philosophy; the sixth is a scientist but has elected an advanced course in history as a sophomore.

It is time to discuss the developments of the conferences in general and of those in history in particular. Considered a very important part of the Advanced Placement Program, these conferences have been decidedly worth while. The principal of the Ann Arbor High School, in the North Central Association speech which I have already mentioned, paid a glowing tribute to one conference—but, also, I believe to all conferences:

> One of the most significant conferences I have ever attended took place in Ann Arbor last June when the Advanced Placement Program brought together about one hundred college and high-school teachers of English for three days. Here I watched some of the country's outstanding high-school and college teachers of English dig into such problems as how to teach a novel, a poem, a short story, an essay, and how to inspire students to write better. I did not observe a tendency for one group to dominate the other. It was a most productive and satisfying conference. We welcome a much closer working relationship with colleges at this level. We need the counsel, assistance, and benefit of college teachers.

There were three pioneer ventures in 1954; the meeting of historians at Williams to which I have referred and similar gatherings of chemists at Kenyon and of biologists at Wabash. The next year there were conferences in all the subject areas, and a meeting for school and college administrators. This pattern has been continued, with the chemists' meeting at Northwestern the farthest west of the June 1957 conferences. Significant, indeed, is the fact that last summer one of the two English conferences was at Stanford, the other at Northwestern, and that the physicists met at the University of Colorado. The biologists were at Goucher; the chemists, at Exeter; the mathematicians, at Wesleyan in Connecticut; the foreign language teachers, at the University of Toledo; and the history teachers, at DePauw. The administrators met at Yale.

More than 700 school and college teachers gathered under Advanced Placement Program auspices in June 1957, and 100 administrators; the number was greater last summer. Next June the conference program will be considerably expanded. I have already said enough about these opportunities for school and college teachers to get to know one another, to talk, to exchange ideas. It is my hope and belief that the DePauw conference for teachers of history will take its place beside the memorable meetings held in past years—at Williams in 1954, at Wesleyan in Connecticut in 1955, at Northwestern in 1956, and at Vassar in 1957.

The Advanced Placement Program has been called, and rightly so I believe, "one of the most encouraging recent innovations in education." In my first report as director of the Program, August 1956, I wrote that I was "more than hopeful and less than confident" about the Program's future. In June 1957, as I was about to return to teaching, I boldly

declared that I was "both hopeful and confident." Now after an exciting year during which I have combined teaching and education-in-the-small with roaming about the country in a thoroughly unprofessor-like manner and with many adventures in education-in-the-large, I am just plain confident. I am about ready to give up my cautious "iceberg theory" of the Program which I developed almost in self-defense during 1955-56 when so little appeared at or above the surface, but when I was sure that there was much more below the surface. There is certainly much more above the surface now than there was two years ago.

Six years ago the belief that something special should be done for able and ambitious students in the form of quality education was a small ground swell. The Advanced Placement Program came into being in those days as a national effort to provide challenging and rewarding experiences for superior students in both high schools and colleges. It had —and has—a firm foundation in basic academic disciplines and a simple structure. It was—and is—more than merely a Program concerned with able students. Developed in pre-Sputnik days, the Program, fortunately, was there when what had been a ground swell became a series of mighty waves.

In a recently issued N.E.A. brochure, *The Academically Talented Student,* a product of the February 1958 conference to which I have referred, this sentence appears, "An advanced program for academically talented studen.s in high school will be of little use if this program is not integrated with the college course offerings." The Advanced Placement Program provides this integration. In the effective "checklist for action" in this same brochure this question appears, "Have you an Advanced Placement Program?"

In other words, the Advanced Placement Program now has a history of which we teachers of history are pleased to be a part. The fact that the Program now has a history is attested by the fact that practically simultaneously it was discussed favorably in such contrasting publications as Phi Beta Kappa's *The Key Reporter* (April 1958) and the *Chicago Tribune* (Sunday, April 20, 1958) and that it received recognition in the recently published "Rockefeller Report on Education."

Can We Provide a Better Program for the Able Student?

CHARLES E. BISH

This is only to say what many have said before—
There is now a critical need for highly-trained people—
There are now thousands of youth with superior ability
who are not completing their high-school education—
This is a tragic waste, and
Perhaps, in retrospect, this will have been the time when
the schools made their most important contribution
to the preservation of our culture.

THE *"Rockefeller Report" on Education* states that "the demand to educate everyone up to the level of his ability and the demand for excellence in education are not incompatible. We must [it says] honor both goals. We must seek excellence in a context of concern for all."[1] To implement this concept in terms of our on-going educational system, we must provide for the ablest student while striving to meet the needs for all the students.

There are many people, both in and out of public education, who feel that a better program is needed in most of our high schools if the upper-quarter of our secondary-school population is to enjoy educational opportunities consistent with their ability. There are approximately 28,000 high-school principals in the United States, and a goodly number are deeply concerned about this problem. Many are doing something about it.

The dimensions of the problem are well established. Of all of our academically able youth, with the IQ-range of 110 and above, twenty per cent drop out of high school before graduation. Of those who remain and are graduated, sixty per cent do not go to college. Of the forty per cent who enter college, one half are not graduated. Converting these percentages into numbers of youth, approximately 100,000 of our ablest young people drop out of school before reaching their senior year; and of those who are graduated, about 200,000 do not enter college.

While the causes for drop-outs are, by no means, due solely to inadequate educational opportunities, there is considerable evidence to indi-

[1] *The Pursuit of Excellence; Education and the Future of America*, Panel Report V of the Special Studies Project, "America at Mid-Century Series" (Garden City, New York: Doubleday and Co., Inc., 1958), P. 22.

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cate that some changes in curriculum and in methods of teaching would help to retain many of these youth. Among those who stay in school and continue their education after high school, too many fail to work up to their full capacity. Such under-achieving pupils need a more carefully planned program—need to be identified and, through guidance, brought into contact with tasks which are appropriate for their abilities.

There are some difficulties in establishing an effective program to meet the needs of the academically talented pupil, but real help is available. The Carnegie Corporation, to name one source of interest in this problem, has given financial assistance to several projects. Included among these, is *A Study of the American High School* which is under the direction of James B. Conant. From Dr. Conant's study have come a series of most interesting and significant observations and recommendations.

With a grant from this Corporation, the National Education Association sponsored a national conference on the identification and education of the academically talented student in Washington, D. C., in February 1958. A copy of the proceedings of this conference, *The Identification and Education of the Academically Talented Student in the American Secondary School,* was sent to each member of the American Association of School Administrators, with the hope that this Report would provide a useful guide for developing plans for programs during the current year.

Recently, the National Education Association initiated a *Project on the Academically Talented Student.* This Project will provide services in the following areas:

1. Provide consultant services to state and local school systems and to local, state, and national education associations.
2. Keep a current record of experimental and research programs.
3. Develop a comprehensive collection of materials on all aspects of the problem.
4. Organize conferences on specialized areas within the field.
5. Prepare and distribute material pertinent to the development of a program.
6. Promote additional needed research.

The *Project on Guidance and Motivation of Superior and Talented Students,* under the direction of J. Ned Bryan and sponsorship of the North Central Association of Colleges and Secondary Schools, will give emphasis to the development of experimental programs for superior and academically talented youth and will eventually, it would seem, provide some significant modification of curricular offerings. The program will be carried on in approximately 100 participating and associated high schools within seventeen states comprising the North Central Association.

Another program of importance to high schools, also supported by the Carnegie Corporation, is the *Inter-University Committee on the Superior Student,* which is directed by J. W. Cohen from the campus of the University of Colorado at Boulder, Colorado. Dr. Cohen is generating

considerable interest among colleges in the extension of their honors programs to students in the freshmen and sophomore years. This will go far toward providing the much-needed articulation between high school and college for the able student.

In addition, there are the Advanced Placement Program of the College Entrance Examination Board, the selection program of the National Merit Scholarship Corporation, and the Science Talent Search of the Westinghouse Corporation. There are also the program of the American Association for Gifted Children,[2] the data-gathering program and the research of the U. S. Office of Education,[3] and the program of the Council for Exceptional Children. Recently, there was founded the Joe Berg Foundation,[4] which provides a science program for the very able pupil at no cost to the school. The Great Books program for high-school youth has been used with success in schools in Wichita, Kansas; Evanston, Illinois; and in other cities. There are also significant programs, at the state level, in California, Oregon, New Jersey, and Maryland, and in cities such as Philadelphia, New York, Cleveland, Pittsburgh, Passaic, Indianapolis, Baltimore, and the District of Columbia, to mention only a few. Finally, one of the most significant programs in the entire country is the program in Portland, Oregon, now in its eighth year, which is directed by Clifford W. Williams and which was initiated in cooperation with the faculty of Reed College.

As a result of these and other activities, a break-through is being made in the interest of pupils with top academic ability—an indication that secondary schools are becoming increasingly aware of the need to make provision for all areas of individual differences. However, most programs for the superior student now underway are to be found in the large senior high school. The best estimate and, perhaps, a very generous one is that not more than five per cent of all high schools are making some special provision to encourage able or superior students to develop their academic potential. *Perhaps, we are leaving our teachers with no alternative than to teach for the average.*

Basically, what is needed most is provision for a more energetic *pursuit of excellence* in high-school education. The *"Rockefeller Report" on Education* makes a most penetrating analysis of the problem when it says:

> . . . By insisting that *equality* means an exactly similar exposure to education, regardless of the variations in interest and capacity of the student, we are in fact inflicting a subtle but serious form of inequality upon our young people. We are limiting the development of individual excellence in exchange for a uniformity of external treatment. Too many of our school systems have fallen into a chronological lock step under which all young people start off together at a given age and march forward one grade per year. Because many educators reject

[2]American Association for Gifted Children, 15 Gramercy Park, New York 3, New York.

[3]*Cooperative Research Projects, Fiscal 1957*, Bulletin 1958, No. 5, Office of Education, U. S. Department of Health, Education, and Welfare. Washington, D. C.: U. S. Government Printing Office, 1958.

[4]The Joe Berg Foundation, 1712 South Michigan Avenue, Chicago 16, Illinois.

the idea of grouping by ability, the ablest students are often exposed to educational programs whose content is too thin and whose pace is too slow to challenge their abilities.[5]

The crux of the matter is that there is *nothing so unequal as the equal treatment of unequals.* Careful planning is a fundamental requisite. Least likely to succeed is a post-Sputnik crash program or an "either-or" program in which any of the progress made in recent years for the better education of the average, the below-average, and the physically handicapped pupil is sacrificed. An effective program must be built upon a philosophy which is consistent with the goals of a democratic society and implemented within this context.

In 1950, the following joint statement made by the Educational Policies Commission of the National Education Association and the American Association of School Administrators served to clarify (if that was needed) the position of public education.

> . . . The principle that special provisions should be made for students of high ability *because of their high ability* is a part of the broader principle that all educational programs should be adapted to meet the needs and abilities of all students. This principle is fully consistent with the fact that many basic educational needs—such as health, character, citizenship, basic skills, and aesthetic appreciation—are common to all children and youth. Moreover, it is not inconsistent with the fact that every individual is unique and that instruction should, within the limits of practicality, be individualized accordingly.[6]

In 1952, while discussing the shortcomings of the American public schools, James B. Conant said:

> . . . To my mind, first and foremost among these shortcomings is their failure to be sufficiently concerned with the intellectually able youth. There is no reason why, within a comprehensive high school well supported by the community, a boy or girl who has academic ability cannot receive a good education. But the number of such schools in which those of high intellectual ability receive adequate stimulus and sound instruction is far too few. There is a false antithesis in the minds of too many people (including some educators) between education for *all* American youth and education for the gifted. For the American public high school to fulfill its purpose, any idea of an opposition between these two functions of secondary schools must be eliminated.[7]

Many schools are doing a good job now. A few are doing an excellent job; but more schools, many more, need to work on this problem. The first question usually raised concerns costs. Programs for the academically talented pupils are not as costly as most of the excellent programs for the average and below-average learner which have been added to the college-

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[5]*The Pursuit of Excellence, op.cit.*, Pp. 22-23.

[6]Educational Policies Commission, *Education of the Gifted.* Washington, D. C.: National Education Association of the United States and the American Association of School Administrators. 1950. P. 48.

[7]James B. Conant, "Some Problems of the American High School: A Preliminary Report of a Study" (Speech delivered at a Meeting of the National School Boards Association in Miami Beach, Florida, on April 18, 1958), P. 2.

oriented curriculum of some years ago; although, in most instances, some additional cost is necessary. For example, programs for the academically talented range from a "free" program—such as the Joe Berg Foundation, the Great Books program, and the Longmont High School Honors Program of Longmont, Colorado, in which community-resource people carry the whole financial burden—to the comprehensive system-wide program of Portland, Oregon, which provides for smaller classes, a full-time director and staff, and a considerable amount of consultant services from nearby Reed College. Here, the cost is approximately $50 extra per pupil involved. In general, it has been estimated that a good program will require approximately a 1.5 per cent increase in pupil-cost.

Quite obviously, there is much that can be done between these limits; and more ought to be done. We have no alternative than to educate talent in a democratic society. Talents will be fostered or will be lost, and talented individuals will be encouraged or discouraged to develop and use their gifts by the values that mark the climate of the school. The school largely determines, by the rewards it gives or withholds, whether given talents will be nurtured and which one of the various talents will develop. We in education need to remind ourselves that "if democracy has a moral and ideal meaning, it is that a social return be demanded from all and that opportunity for development of distinctive capacities be afforded all."[8]

There is real encouragement in the fact that many adults who, a few years ago, urged the same amount and kind of education for all individuals are now giving way to a more genuine democracy, which calls for a program of education which lifts each individual to the highest level of his capacity. Happily, attitudes are also beginning to change among high-school youth in many schools. Anti-intellectualism still can be found; but both student and adult thinking favorable to high academic achievement is gaining acceptance. Communities which once used their high-school youth as "Exhibit A" at all too many public functions are beginning to wonder whether or not this practice has affected the quality of learning they deeply desire. The need to raise money, the pressure of well-intentioned groups who seek to inject self-identifying projects within the curriculum, the long trip for athletic teams, the excessive hours of out-of-class time required for practice for public events, attitudes of anti-intellectualism brought from the home, western flick-style dress, smoking rooms, and jazz during the lunch hours—these are some of the factors that affect the climate of the school, which, if not controlled, can erode the very essentials of the best curriculum. Many principals have been concerned about these problems for a long time. Communities are now becoming concerned.

A pattern of procedure for a program ought to be developed by every high school in the United States. It ought to be done by teachers and

[8]John Dewey, *Democracy and Education*. New York: The Macmillan Co., 1916.

school officers within the framework of the particular school, whether rural and small, metropolitan and large, suburban and particularly economically favored, or consolidated and comprehensive. In general, a program is structured within two main areas: *one,* administrative procedures including identification, grouping, scheduling, guidance procedures, evaluation, public relations, and follow-up techniques; and, *two,* provision for the development of content and materials in the areas affected. This quite obviously is an over-simplification, for much time and study will be required to deal with the details within each area. For example, it would seem that a series of basic understandings should be developed in which terminology ought to be agreed upon. Within this context, the basis for identifying the specific pupils for whom we propose to provide a special program should be established. An arbitrary, but reasonable, classification would place the upper twenty per cent of a normal distribution of youth in the superior group, the upper fifteen per cent in the academically talented group, and the upper three per cent in the gifted group. Second, having decided upon the limits of the program, it becomes necessary to adopt *criteria for pupil-selection.* Most schools use a pattern of items including group and occasional individual intelligence tests; achievement tests; interest inventories; teacher-grades; and the subjective opinions of teachers, counselors, and parents. Thus, when a pattern of such items is considered by an experienced counselor, the chances of error are reduced to a minimum.

But, in many schools, the arrangement of ability does not follow a pattern of normal distribution. In a school in a favorable suburban area, perhaps, there may be as many as fifty per cent of the pupils in the academically talented group; while in a less-favored location, perhaps, only three per cent may be involved. Some schools may desire to deal temporarily with only the very able—those with IQ's of 130 or above—limiting their interest to only the truly gifted. This can be done, in most instances, only in the larger high schools or by bringing together the pupils from several schools—a procedure which for many schools would have its own built-in problems.[9]

Thus, "by any good means of its own choosing, every secondary school will be performing a high service both to society and to its own pupils if it devotes itself wholeheartedly to the search for youth whose abilities warrant further" and, perhaps, special experiences with content material and teaching procedures "and to unremitting effort to see to it that they themselves desire to obtain more education and that they have the opportunity."[10]

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[9]For a complete discussion of this problem, see Chapter IX, "Identification of the Gifted," by Robert F. DeHaan and Robert C. Wilson in *Education for the Gifted,* The Fifty-seventh Yearbook of the National Society for the Study of Education, Part II. Chicago: The University of Chicago Press. 1958. Pp. 166-92.

[10]Educational Policies Commission, *Manpower and Education.* Washington, D. C.: National Education Association of the United States and the American Association of School Administrators. 1956. P. 102.

Practical methods of identifying high-ability high-school students "tend to combine the two logical extremes of simple nomination by teachers and a battery of objective tests. . . . The strength of using teachers' nominations is that they are efficient [and] they involve [him] psychologically in the program. . . . The value of objective tests lies in the fact that they provide data which are . . . standardized from classroom to classroom."[11]

A variety of program patterns and scheduling procedures have been used in an effort to fit pupil needs to local conditions. A partial list would include:

One, *enrichment within a heterogeneous group.* This may be all that can be done in a small high school—a school in which there are less than a hundred pupils in the graduating class. Until consolidation can be effected, the teacher will need to be provided with additional materials so that the bright student can be challenged to work to the level of his capacity through differentiated assignments.

Two, *grouping in classes in accordance with ability.* In this instance, there will, of course, be differences; but, in some respects, the differences will be less than in an unselected group. Electives, of course, provide a type of grouping. Here, there is great responsibility on guidance and program-selection, for the freedom to select may, for some, mean the freedom to escape from working up to one's potential.

Three, *multiple-track programs.* These are well-known and increasing in popularity. Along with the track structure is the occasional practice of program-tagging. These are procedures which are important; but essential are the motivation and development of good minds by providing an appropriate climate within the school.

It is sometimes argued that such practices have the inherent disadvantage of bringing about defensive behavior, often in the form of retaliation upon the few who are "set apart." This may be overdone, for youth of high ability "are, in general, appreciably superior to unselected youth in physique, health, and social adjustment; markedly superior in moral attitudes . . ." refuting "completely the traditional belief that gifted children are usually one-sided."[12] The consideration affecting the decision to identify and assign the more able students in specific programs and to specific classes should be under what arrangement can the able pupil be best motivated and educated. For these pupils, motivation to do well in their school work is enhanced by their understanding of the implications which their possessing high capacity has for high achievement. Basically, it would seem that the able pupil needs to be programmed where he is free to stretch his mind, both in breadth and

[11]Robert J. Havighurst, Eugene Stivers, and Robert F. DeHaan, *A Survey of the Education of Gifted Children*, Supplementary Educational Monographs, Number 83. Chicago: The University of Chicago Press. 1955. Pp. 6-7.

[12]Lewis M. Terman, "The Discovery and Encouragement of Exceptional Talent," *Growth, Teaching, and Learning: A Book of Readings*, ed. H. H. Remmers and Others. New York: Harper and Brothers Publishers. 1957. P. 66.

depth. He should be freer from grades and their restrictions than in regular classes; encouraged to practice critical thinking at a more fundamental level; and given opportunities to bounce his reactions to the books he reads or the projects he develops against the good minds of his peers and, thus, clarify his own thinking in the process. There are books too good to be read alone by the most gifted individual. Thus, are raised some serious questions concerning appropriate methods. It is suggested that what he needs least is a full-time lecturer or an assign-recite-and-test teacher. What impairs his growth is the restrictive procedures of an over-structured teaching method still frequently found in classrooms these days. What he needs is the freedom to communicate; to listen; to read; to work; to attack problems; to think critically; to report; to take his turn at teaching his peers; to enjoy the thrill of creative work, be it a project in the area of social studies or science; and to identify and to come to know something about basic issues in economics, history, science, mathematics, and in the humanities. If he is to grow, he must have room to grow.

But, no matter how adequately a school may deal with problems of identification and grouping, the major problems in educating talented youth are those concerned with content and material. No attempt will be made here to outline specific content except to suggest that since academically talented students are, or should be, good readers, they therefore should be given reading assignments of above-average difficulty. An appropriate reading list dealing with basic issues in the subject matter areas may well be developed. Pupils may spend two or three class sessions per week in individual study. The remaining time then could be used in seminar-type discussions with the teacher, an outside resource person, a student, or a combination of these sharing the role of discussion leader.

In most schools, there is a shortage of time in the school day for more "solids." Yet, here is a most important facet of the problem. The basic allocation of time as prescribed by a Carnegie Unit ought substantially to be preserved. Therefore, in many instances, the school day will need to be lengthened to perhaps 7¾ hours or the school year lengthened in order to program a pupil with the recommended five "solids" and electives for the prescribed length of time. Six periods in a six-hour day are frequently found to be inadequate. Many schools which cannot lengthen the day or increase the number of days are going to an eight-period day of 40 minutes each in order to provide the following four-year program for academically talented pupils: English, 4 years; foreign language, 3-4 years; social studies, 3 years; science, 2-3 years; mathematics, 2-4 years; health and physical education; and appropriate electives to meet graduation requirements.[13] There are problems of guidance, teacher

[13] *The Identification and Education of the Academically Talented Student in the American Secondary School.* James B. Conant, Chairman, Conference of NEA Academically Talented Pupil Project. Washington, D. C.: National Education Association. 1958. 160 pp.

assignment, teacher training, parent reaction, and evaluation; but solutions to these problems are tied in with local conditions prevailing in the area and can be developed only by those familiar with the community.

Various surveys, including one by the NEA, show that each year one-half million individuals who have the ability to be graduated from college do not do so. A tragic loss of badly needed trained people! We are committed to the principle that public education is free, and this is the basis upon which a democratic government can exist. We pride ourselves on cherishing differences and respecting the dignity and worth of each individual. We are committed not to leveling out what we cannot level out—physical and intellectual inequalities—but to equating opportunity and to serving each individual as best we can by means appropriate to the individual's needs, whether they are the results of handicaps or gifts. All arguments which obtain for the education of all the children of all the people obtain for the education of the academically talented. Dr. William G. Carr put it this way at the National Education Association Centennial Meeting in Philadelphia in 1957.

> In the next two decades there will be in American education one many-sided change. Its outstanding characteristic may be summarized as a subtle, but very important, new emphasis on *quality*.
>
> As *quantity* was the primary goal for the first century, so will *quality* be our chief aim for the second. We have been concerned that every child get into school. Now we must ask how much each child gets out of school. Nearly all now are in school—not in schools with small classes, full-day sessions, modern equipment, and a well-prepared career teacher—but still in school. While we continue to defend that achievement, we shall also accept and demonstrate an intensified concern for the excellence of the instruction provided.[14]

By completing the circle—providing now for the superior pupil as we have done and are doing for others who come to our schools, we shall surely find that we will be improving the "whole school." All pupils can learn better in a climate where *it's the thing to do.*

[14]William G. Carr, "The Past Is Prologue," Condensation of an address to the Representative Assembly at Philadelphia, *NEA Handbook for Local, State and National Associations 1957-1958*. P. 3.

Midwood High School's Advanced Placement Program

JACOB L. BERNSTEIN

THE Midwood High School program differs in one basic respect from most programs in other schools. At Midwood an effort is made to identify exceptionally bright pupils at the time they enter the program from our ninth-year class and from the feeding junior high schools. The program starts in the tenth year, and is a *vertical* one, in depth, planned for three years. It is not merely a horizontal program limited to the senior year only. Even before students enter the Midwood High School, our personnel in charge of articulation takes steps to evaluate the records in the feeding schools, visit these schools, and interview pupils, parents, and teachers. There is, therefore, an early beginning in the process of identification or selection.

The exceptionally bright pupils are divided into two groups—those whose major potential capacity and interest fall within the area of mathematics and science, and those whose major potential capacity and interest fall within the area of language-arts, or so-called "humanities."

In the tenth year, pupils in the mathematics-science group are challenged in an enriched course in geometry, instruction in science which emphasizes much more original and laboratory work in the fields of both high-school biology and high-school chemistry, one foreign language, and a double-period core class in enriched English and social studies.

In the eleventh year, these pupils are ready to take high-school physics as well as a continuation of enriched mathematics through trigonometry and advanced algebra. In the twelfth year, these pupils are ready for two or more of the following courses (in addition to the usual English, social studies, and foreign language): college mathematics, analytics and calculus; college biology; college chemistry; and college physics.

In the tenth year, the language-arts group is challenged by specially enriched and accelerated work in two foreign languages; an enriched core arrangement in English and social studies, emphasizing wide reading, creative writing, and research; and the usual biology and geometry. As these pupils progress through the eleventh and twelfth years, they continue in "blocked" classes in the subjects of their special interest, involving themselves in journalism, dramatics, English classics, creative writing, and "honors" work in social studies. In their senior year, they are, there-

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fore, ready for the college-level work in English literature, English composition, French, Spanish, and social studies.

We require all pupils in these two streams to take the advanced credit and placement examinations in order to avoid unnecessary duplication in college and to give us a basis for the evaluation of our own program. It should be noted that the two streams sometimes cross boundaries or intermingle since it sometimes happens that a pupil is not only very strong in science, but is also top-notch in English or foreign language. It is also of interest to note that, in spite of a rather heavy program, these students, on the average, are doing a better job in extracurricular, cocurricular, and service activities than are other bright pupils who are not quite up to these groups. The general idea of organizing this program in depth has justified itself, both from the point of view of the intellectual and personal growth of the pupils involved and from a consideration of the outstanding way in which they have maintained themselves in later college work.

Memorial High School's Advanced Placement Program

F. HAMILTON WHIPPLE

AN ADVANCED Placement Program has as its first objective the stimulation of superior students in order to induce them to use their talents to the utmost. A second objective is advanced placement in college on the basis of Advanced Placement examinations prepared by the College Board and given in May of the senior year. Those who do not succeed in these examinations but who have done their best will still have succeeded in achieving the fundamental objective of the program. Since, for the nation as a whole, the course towards Advanced Placement is uncharted and would have to be plotted for each school anyway because of local shoals and deeps, we are proceeding cautiously and taking frequent soundings as we go.

In such a program, subject matter is explored more deeply because these students think and want to know. Subject matter may be covered more quickly because the pace is not slowed by unnecessary drill. This is true especially in mathematics and science, for a speed-up as well as enrichment is necessary if room is to be made for a freshman college course in the senior year. In English, languages, and history, however, depth of coverage may preclude speed. The end result of intensive courses in these subjects in grades seven through twelve will mean, we hope, that some students are ready for the Advanced Placement examination in their senior year.

For years teachers have spotted very superior individuals. They have fed them supplementary readings, held individual conferences with them, stimulated them to write, to solve more difficult problems. A a result we have had our share of students who did so well on College Board examinations or freshman placement examinations that they have been exempt from required freshman courses or have been placed in advanced sections.

In the spring of 1956, we decided we were large enough and had a sufficiently well-developed testing program to undertake the segregation of these very able students. We believed we could organize the work in these segregated sections so that a larger but still highly selective group of students could benefit from enriched courses. Thus we would direct several towards Advanced Placement examinations instead of the occasional very unusual individual. We would risk the chance that some

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might not succeed in achieving Advanced Placement standing. Nothing would be lost, however, as long as we achieved the fundamental objective of stimulating the able students to use their talents to the utmost. We agreed that we should work out a method for arriving at a *final* grade in these courses so that students would not suffer in class rank because they had so much more to do, because they took more exacting examinations, or because they were required to cover the ground in a shorter time. If, in our experiment, we should ask students to try a Regents examination on short time with unhappy results, we were to prepare a review and arrange for them to repeat the Regents when they were more mature. Finally, we agreed that individuals would be added to or dropped from these special sections when guidance so dictated. We have called these "express" classes having in mind that they would be fast and that they would make no long, local stops.

In the spring of 1956, we undertook the selection process at the sixth-grade level for those who would enter the seventh grade in the fall; at the eighth- and ninth-grade levels for those who would be taking ninth- and tenth-grade mathematics in the fall. This was done again in the spring of 1957.

At the sixth-grade level we used the results of the Iowa Test of Basic Skills, the Otis Test, and the comments of sixth-grade teachers. We selected two sections who would take a greatly enriched, but not necessarily speeded up program of English, mathematics, and social studies. To be sure we had not robbed the regular sections of too many stimulating students we made a distribution of the I.Q.'s in them. We found a satisfactory range in the regular sections with plenty of I.Q.'s in the early 120's.

At the eighth- and ninth-grade levels, selection for "express" sections in mathematics was made on the basis of Differential Aptitude Test scores, New York State Mathematics Progress Test, and teachers' judgment. We have taken "soundings" from time to time. The "soundings," as would be expected, show that some students were in over their depth and that others should be encouraged to venture into deeper water.

From the first seventh-grade "express" sections, seven have been transferred to the regular sections while six have been changed from regular to "express" sections. From this year's seventh grade, four have changed to regular while four have moved from regular to "express." From last year's "express" ninth grade, ten have changed to regular leaving fourteen in this year's tenth-grade "express." From last year's express tenth grade, two have changed, others have left school for one reason or another so that there are now thirteen left from a class of twenty.

We conclude that selection tests tell us a lot, but they do not reveal the all-important factors of maturity, drive, and sustained interest. Only the possession of these last qualities can explain the success of the ten students who have been transferred from regular sections to "express" sections in

the seventh and eighth grades. In the selections for this year we weighed these factors heavily in so far as we were able to obtain evidence of them. What evidence is there but performance and teacher observation of behavior?

Work on the Advanced Placement Program is proceeding on other fronts. One teacher directed special study for a student during last year with the result that he received Advanced Placement in English at Princeton. Building on that experience he has directed the study of eight from the Class of '58. None may be as gifted as Fred, but all will profit from the experience and some will receive recognition. Another teacher is working similarly with a girl in French. Two teachers are completing detailed studies of the students in grades nine through eleven to see how many might profit from honors sections in English and social studies in each grade. Their study includes D.A.T. (verbal, abstract reasoning, sentence), Iowa Reading, ACE verbal scores, and class performance. It is apparent from what they have learned so far that it should not be difficult to find qualified students in each grade who would request inclusion in such sections even though they know extra work will be entailed.

Honor Program of Studies Including Advanced Placement Study

LENOIR H. BURNSIDE

MONROE High School is a comprehensive public school with a population of approximately 2,000, grades seven through twelve. It operates under a democratic ideal of equal, though not identical, educational opportunity for all. Toward the realization of this goal, in January 1939 Monroe High established honor classes for its intellectually gifted.[1] Since that date there have been several modifications of the organization, as continuous evaluation of experience indicated and opportunity made possible.[2]

Organization

The present organization, known as the Honor Program of Studies, comprises four class groups—one at each grade level, nine through twelve. The maximum class size for the ninth- and tenth-grade groups is twenty-five; for the eleventh and twelfth grades, the maximum is twenty. Criteria for admission to the Honor Program of Studies are: high rating on tests of intellectual aptitude and of reading comprehension, superior achievement in each of the basic academic subjects, the expressed desire of the student, and approval of his parents. Consideration is given to health and emotional stability. To continue in these classes, superior achievement must be maintained.

Curriculum

The minimum curriculum of the Honor Program is the regular New York State Regents' college preparatory syllabus, including a choice among foreign languages. Specific enrichment, both utilitarian and cultural, is provided for all in the group through inclusion in the curriculum of typewriting, public speaking, and related arts (a course to increase knowledge and understanding of the fine arts). There is opportunity also for the development of special talents in art, music, photography, *etc.* Students in the program are required to take the basic subjects of a liberal education. Narrow specialization at the secondary-school level is not permitted. However, there are opportunity and encourage-

[1]Burnside, Lenoir H. "An Experimental Program in Education of the Intellectually Gifted Adolescent." *The School Review*, 1942, 50 (4) : 274-285.

[2]Sheehan, Mary A. "How Can the Needs of the Gifted Students Be Met?" *The Bulletin of the National Association of Secondary-School Principals*, 1954, 38 (202) : 266-269.

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ment for each student to work to capacity in areas of his special interest and abilities. This is motivated through individual assignments or self-initiated projects and research.

Advanced Placement Program

The Honor Program of Studies offers study beyond the present New York State Regents' requirements in order that able and well-prepared students may qualify for college admission with advanced standing as outlined under the plan by the *School and College Study of Admission with Advanced Standing,* an activity of the College Board. Students electing advanced placement study pursue courses based upon the published descriptions of requirements in the booklet, *Advanced Placement Program Syllabus.*

Although the specific Advanced Placement course is taken at the twelfth-grade level, the goal has been set up at the ninth-grade level. Here begin marked enrichment in subject areas, greater emphasis on individual projects, and independent study. These result in great flexibility in student progress.

Each student is encouraged to do as much as he can in the shortest possible time. For some, acceleration is desirable in order to gain time for more intensive work in a field of special interest. Acceleration at any level of education is a powerful motivating device for the more able.

Monroe High School has participated in the Advanced Placement Program from the inauguration of the program. Student interest increases with each year, for the way is open for any qualified boy or girl to participate.

Instruction Policy

The particular techniques of instruction are left to the teachers, but time is divided between group and individual work. Reading, greater in quantity and quality, longer range assignments, more training in critical analysis to stimulate active thinking, seminar discussions, more stress on writing are typical of the Honor Program classes.

Instruction in Advanced Placement courses has been entirely tutorial guidance of Honor Program students studying independently. This has been made possible only because of the dedication of teachers in the service of an eager and able student. In this work, more advanced texts and source materials are used. Cooperation by professors at the University of Rochester has been an asset. Emphasis is on excellence of work. Space does not permit full details of courses, but the following outlines are illustrative.

Recent changes in the curriculum of the Rochester Public Schools and authorization for classes of a minimum of five students are marked steps toward greater participation. This year, tutorial instruction continues in some subjects where numbers are less than five, but Monroe High School now has two classes in Advanced Placement Mathematics.

Guidance

An integral part of the program at Monroe High School is careful guidance of the students by trained guidance counselors, who are assisted by consultation with the psychologist and with teachers and parents of the student. Monroe High School will continue to study, to evaluate, and to revise its educational program toward greater realization of the goal of equal opportunity for all, including its most highly gifted students.

Advanced Placement Outlines

English Composition

1. The main objective is that the student's compositions be well written and significant; therefore, the student is taught to write compositions that are interesting; avoid triteness and superficialities; are thoughtful; are organized with progressive development, self-contained paragraphs, and appropriate transition; are logically sound; are specific with examples supporting generalities, specific facts, and concrete details; use words carefully with precision of meaning, with awareness of connotation, and with appropriateness to usage level; show a feeling for style by avoiding redundancies and "deadwood," by using clear, concise phrasing, by appropriate use of subordinate and main clauses, by avoiding clichés, and by demonstrating fluency and unity in connecting sentences; and indicate a mastery of mechanics.

2. To attain the above objective, the student must write themes frequently. Assignments that have been especially beneficial are the following:

a. Developing a topic from a quotation. This requires the student to deal with complex ideas and to use careful analysis and logic.

b. Defining or explaining an abstract term. This requires the writer to be concrete in his details and to use illustrations.

c. Writing "parallel" themes, one of which is subjective, the other objective. This requires the writer to avoid subjectivity where it is undesirable and to show an awareness of connotation.

d. Writing a research paper. This requires the student (1) to choose a subject in which he is interested, but which is limited, not too general; (2) to prepare a bibliography on cards and to use library aids: the card catalog, *Reader's Guide, etc.*; (3) to gather material, take notes, evaluate and select, and outline; and (4) to use footnotes correctly and supply an annotated bibliography.

e. Writing other compositions to persuade, to describe, or to explain.

French

1. Method: Tutorial. Student works independently under the guidance of the teacher in the selection of reading material according to student's interest and taste

a. Reading suggestions include: (1) classics; significant examples in prose, poetry, and drama; (2) modern reports and treatises; and (3) contemporary writers.

b. Oral and aural work includes: (1) casual conversation; (2) reading of sustained passages to student; (3) explanation and enlargement of ideas found in readings; (4) résumés and critiques; and (5) tape recordings and records.

c. Written work covers: (1) free composition, including narration, criticism, description, comparison, and conversation; (2) literary résumés and critiques; and (3) advanced idiomatic translations.

d. Literature includes: (1) extensive reading from standard and significant authors and (2) intensive reading for acquisition of knowledge of French history, thought, and development.

2. Texts used
   Précis de la Littérature Francaise, French Composition and Conversation, by J. Badaire
   Les Oberlés by René Bazin
   French Composition and Conversation by E. Olmsted

Mathematics—Analytic Geometry and Calculus

1. Method of Instruction—tutorial—individual conference
   a. Development of new topic
   b. Assignment
   c. Discussion of home study
2. Texts
   Elements of Calculus by Granville, Smith, and Longley
   Brief Course in Analysis by Hill and Linker
   Calculus and Analytic Geometry, chap. 1-10, by Thomas
3. Topics
   A. *Analytic Geometry*
      1. Straight line equations including normal form; distance between 2 points; and distance between a point and a line.
      2. Conic Sections—standard treatment: locus definition, recognition from equation foci, Latus rectum, axes rotation and translation of axes, *etc.*
      3. Polar equations of circle, cardiod, limacon, 3, 4—leaf rose, *etc.*
      4. Parametric equations
   B. *Calculus*
      1. Derivative as limiting value of secant line as $\triangle X \rightarrow O$
      2. Development of rules for differentiation of explicit and implicit functions—algebraic, trigonometric, exponential, and logarithmic.
      3. Applications of derivatives such as: maxima, minima, points of inflection; velocity and acceleration; and equation of tangent line.
      4. Integral
         a. Definition—as a summation; as the inverse of the derivative
         b. Development of formulas, Rolles Theorem, *etc.*
         c. Applications such as: area under curve; volume and surface area of solids; Simpson's rule; length of arc; center of gravity; work; preceding examples using both rectangular and polar coordinates.

Advanced Placement Physics—Condensed

1. Mechanics

Rectilinear motion	Waves
Motion in a plane	Thermometry
Dynamics	Linear and volume expansion
Linear momentum	Conservation of energy
Work, energy, and power	Specific heat: calorimetry
Gravitation	Change of phase
Hydrostatics	Properties of gases (ideal)

2. Electricity and Magnetism
   - Quantity of change
   - D. C. circuits
   - Magnetic fields
   - Forces on a conductor and on a moving charge
   - Induced electromotive force
   - Determination of e and e/m
3. Light
   - Reflection, refraction, dispersion
   - Image formation
   - Interference and diffraction
   - Polarization (linear)
   - Electromatic radiation
4. Atomic and Nuclear Physics
   - Radioactivity
   - Mass-energy relation
   - Quantum phenomena
   - Thermal radiation
5. Optional topics
   - Machines—simple and compound
   - Dynamics of rotation
   - Velocity of compressional waves in various media
   - Specific heats of polyatomic gases
   - Carnot's cycle for an ideal gas
   - Second Law Thermodynamics
   - Dielectrics
   - Capacitors
   - Kirchoff's laws
   - Electrolysis
   - Thermoelectric effects
   - Alternating Current
   - Particle—wave duality
   - Electron tubes

For greater detail of topics see Reports of Committees 1952-53, *School and College Study of Admission with Advanced Standing*. The technique used is independent study with occasional conferences with the teacher. Student is required to follow the above outline and correlate ideas from the following texts:

University Physics by Sears and Zemansky

College Physics by White

Introduction to Physics by Howe

College Physics by Perkins

Introductory Course in College Physics by N. H. Black

Analytical Experimental Physics by Lemon and Ference

Elements of Physics by Shortley and Williams

Procedures in Experimental Physics by Strong

Particles of Modern Physics by Stranathan

Advanced Work for Gifted Students at Senn High School

SADIE S. ENGELSTEIN
and HENRIETTA H. MILLER

SPECIAL HISTORY CLASSES PERMIT STUDENTS TO EARN COLLEGE CREDIT

AMERICA'S security and future rests, to a great extent, upon the best development of the potentials of scholarship, creativity, and leadership in our young people. At present, when much attention is focused upon re-evaluating and redirecting education in terms of the maximum development of the able student, the Advanced Placement Program is one of the provocative and realistic approaches to the problem. By providing challenging experiences to meet the needs and abilities of these students the program is effectively serving the welfare of the nation.

The Advanced Placement Program is a flexible plan provided especially for capable and ambitious students in secondary schools; some school systems have already come to consider it a continuous process throughout the child's education. Extensive and intensive work of high quality by students, under careful guidance of teachers in the secondary schools, entitles them to take college-level objective and essay examinations given nationally, during the month of May, under the supervision of the College Entrance Examination Board.

Successful Students Receive College Credit

Success in these examinations may result in college credit or advanced standing when the students enter college. With the students' records and recommendations, the teachers also send detailed reports of their work. These include careful descriptions of course content, bibliographies, methods of instruction, clock hours spent learning at home and in school as well as other pertinent comments and information concerning the individual's qualifications to carry on advanced studies.

The examinations are offered in the following eleven subjects: Literature and English composition, French, German, Latin, Spanish, American History, European History, mathematics, biology, chemistry, and physics. Students may take these tests in more than one subject either during their junior or senior years.

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The Advanced Placement Program, which originated in 1952, now operates under the College Entrance Examination Board, 425 West 117th Street, New York 27, N. Y. Its present director is Jack N. Arbolino. Advanced Placement developed from exploratory projects supported by the Fund for the Advancement of Education. The basis for this work was laid under the leadership of the late Gordon Chalmers, president of Kenyon College. Its parent body was the School and College Study for General Education, also referred to as the Andover, Exeter, Lawrenceville, Harvard, Princeton, and Yale Study.

Chicago Area Schools Participate from the Start

When the program began in 1952, twelve (and later fifteen) colleges agreed to give credit and advanced placement to students from twenty-seven participating secondary schools who satisfactorily met the requirements of appropriate courses and the examiners. Among the twenty-seven secondary schools were seven public schools. Two of these—Evanston High School and Oak Park High School—were located in the Chicago metropolitan area.

Great interest in this project is reflected in its phenomenal growth. In 1957 six students from Senn High School, who took the examinations in American History and European History, pioneered by being the only Chicago public high-school students to participate in these examinations. They, moreover, distinguished themselves by passing creditably and their standing entitled them to receive college credit and advanced placement at the various colleges and universities of their choice.

Program Viewed as Desirable

Like many teachers who are searching for opportunities and means to stimulate and to channel the abilities and ambitions of their students the writers view the Advanced Placement Program as one of the natural answers. It is academically sound, for it provides deep and satisfying educational experiences to those who utilize it. Work on the Advanced Placement Program serves one of the most pressing needs of secondary-school pupils. More than ever, in these days when institutions of higher learning are becoming more crowded, they are demanding and selecting the best trained candidates for admission. Participation in the Advanced Placement Program proves a student's ability and willingness to study on college level. He is a good risk.

Senn High Embarks Upon the Program

The writers draw these conclusions from personal contacts with instructors of the Advanced Placement Programs in neighboring secondary schools—Evanston Township High School and New Trier High School—a study of the Advanced Placement literature, and discussions with pupils, parents, and administrative personnel. Thus spurred by the possibilities of satisfying and enriching rewards for their students, the writers embarked upon such a program within the administrative framework of Senn High School.

Since the Advanced Placement Program is flexible, it can be adapted to the individual institution. At Senn it emerged from two groups selected in differing ways and on varying bases. One, in the required subject of United States History I, under one teacher, was a high-ability group of twenty-seven juniors. The other, in the elective subject of Modern European History II, under another teacher was a class of thirty-five juniors and seniors.

Selecting Students for the Classes

The instructor of the latter class interviewed each pupil in an effort to determine his needs, wants, abilities, and interests. For those who desired to enter institutions of higher learning (80 per cent of Senn's graduates attend them) and whose willingness to work was proved by their past records, particularly in the language arts, and scores on psychological and reading tests, the instructor recommended the Advanced Placement Program in European History. These pupils were urged to register for the "honors" classes offered in Modern European History I and II, the History of Civilization I and II. None of the students in these "honors" classes were selected by the adjustment counselor although some class advisers and other colleagues recommended individuals.

In contrast, the members of the United States History I class, the "honors" ability group, were selected by the adjustment counselor on the basis of their rank on the American Council on Education Tests and the S. R. A. Reading Test, or similar tests. These tests are routinely administered in most Chicago public high schools. The twenty-seven pupils of this particular "honors" class were in the highest percentile of the approximately three hundred sophomores tested in the fall of 1956. None was below the 94th percentile.

Building Teaching Plans for Advanced Groups

The teachers of these history classes build their courses around fundamental historical problems and issues with emphasis upon their implications for the contemporary world. Constant revisions are imperative, and student-teacher planning plays significant roles in these processes. Continuous assistance stems from colleagues in colleges and universities, Evanston Township High School, New Trier High School, and the Advanced Placement literature.

College textbooks and other advanced works, with an emphasis upon primary sources, furnish some of the basic materials for these students. Their prolific reading, their ability to recognize problems, to see the issues, (hence, their invaluable help in teacher-student planning), their willingness to utilize other mass media of communication, testify to their desire for knowledge and its meaning to them.

Oral and written expression affords numerous opportunities for critical interpretation and evaluation. Student research often culminates in well organized and carefully documented papers. Constructive criticism of findings is effectively handled in discussions following panel or round-

table presentations as well as during seminar meetings and tutorial sessions. Indeed, the students clamor for additional time, not only for these techniques, but also for periods of supervised study with teachers of the subjects.

Wide Reading Is a Salient Feature

Like many teachers, the instructors are finding the "paperbacks" a boon. The writings of such great scholars as Heffner, Hofstadter, DeToqueville, Parrington, Toynbee, Brinton, Whitehead, Machiavelli, to mention only a few, become part of the classroom libraries. Furthermore, they also find their way into the students' home libraries. One surprised father, realizing that his usually academically indifferent daughter was spending her allowance on these books and avidly reading and discussing them, wrote her instructor a letter of appreciation.

As indicated previously, co-operation with colleagues in colleges and universities is also proving invaluable in enriching the Advanced Placement Program. The writers, who have long been giving "practice" teachers from institutions of higher learning the benefits of educational experiences in their classrooms, gratefully appreciate the reciprocal arrangements. These contributing colleges and universities are now also generously serving as resources when needed. An idea of the numerous ways in which they contribute to Senn's Advanced Placement Program in history can be gleaned from a few illustrations.

Students Attend College Classes for "Practice"

After careful preparation by the teacher and students, the latter, in teams of two or three, attend lectures at the colleges and universities. Upon return to their classes, they enthusiastically share their educational experiences by distributing mimeographed notes to the other members of the class. Criticism of the form and contents of these notes provides a constructive means of pre-college training.

After reading Clinton Rossiter's *The American Presidency*, in the "paperback" edition,[1] some members of the class were delighted to attend a lecture by the author at Northwestern University. The cry for "more" of these privileges led to an arrangement to place the class on the appropriate mailing list.

Audio-Visual Materials Prove Valuable Aids

Selective use of audio-visual media is also providing motivation, depth, and breadth for the students on the Advanced Placement Program. For example, WTTW Channel 11 makes it possible for young people to see and to hear some of the scholars they are studying. Recently, Professor Henry Steele Commager's introduction to the "Heritage Series" provided the stimulus for lively discussion which reflected the students' understanding and appreciation of historical background and the nature of the concepts involved. One pupil-listener thoughtfully presented the

[1]Signet Book. New American Library, 35 cents.

instructor with a tape recording of the lecture for the benefit of future classes.

Indeed, tape recordings are becoming a vital part of the classroom library and they are available to pupils during their study periods. One of these tapes is the outstanding series of lectures on "American Culture" by a leading contemporary historical scholar at Columbia University, Jacques Barzun.

A recent presentation of the play, "The Rivalry," with Agnes Moorehead, Raymond Massey, and Martin Gable, led the instructor to believe that this play would serve as a splendid motivating force for the study of the Lincoln-Douglas Debates and the Civil War Period. Through the co-operation of the educational director of the institution under whose auspices this play was presented, special-rate tickets were obtained for the students. The effect of this play was noted in the students' reading which included such books as Allen Nevin's *Emergence of Lincoln.*[2]

Seminars, Tutorial Sessions Are Important

Among other methods of instruction which pupils and teachers find vital to success for studies on higher levels are the tutorial and seminar sessions and the two- to three-hour examinations. For these educational experiences, students often arrive before regular school hours. They read, criticize, and evaluate original essays written by their peers on historical problems. Recently, a member of the staff of the University of Chicago, after spending some time with these students, described their results as "college level."

The tutorial sessions are acclaimed as one of the most helpful methods by the six students who pioneered in the Advanced Program at Senn; the more than sixty students who worked in the program heartily agree with their predecessors. They all testify that they learn much from individual conferences during which their work, especially long examination papers, can be constructively, if at times ruthlessly, dissected.

Students Are Eager To Take Examinations

Another indication of the eagerness and seriousness with which these students participate in the Advanced Placement Program can be seen in their insistence upon more, longer, and increasingly difficult essay examinations. This fact results, in part from their realization that they are not allotted sufficient time for these opportunities within their programs, as now structured. They know that these experiences are extremely important. They agree with many of the students who take scholarship, proficiency, and achievement tests that their chief handicaps are due to the lack of experience in taking long, difficult, and problem-solving examinations.

Students in the Advanced Placement Program are, however, attempting to conquer these handicaps in their morning sessions. Often, with the help of understanding teachers, they remain through the division, first,

[2]New York, Scribner. 1953.

and sometimes, even into the second and third periods of their programs in order to write examinations. Additional experience is afforded by "take-home" examinations. Some students complain, however, that their families and friends do not understand what they are trying to accomplish when they ask not to be disturbed for a period of three hours. Such examinations follow the pattern set up by the College Entrance Examination Board. The first forty-five minutes are devoted to the objective test and two and one-quarter hours are allocated to the essay questions.

Program Requires Widespread Co-operation

The success of the Advanced Placement Program will be greater if it receives the full cooperation of the entire school system, the administrators, the librarians, and other departments. Students and teachers at Senn High School are extremely fortunate in possessing a sympathetic administration helpful in many ways. Not the least of these is furnishing funds for pamphlets, mimeographing, *etcetera*. The teacher-librarian and her staff assist in the selection and securing of books and other materials as well as by expanding the services of the library to meet the growing needs of the pupils. The teacher in charge of visual aids at Senn, when presented with a problem as to where and how the Advanced Placement students might hear some of the tape recordings, (when time did not permit playing during the regular class periods), furnished his office and set up the recorder whenever the students presented themselves.

From their experiences with the Advanced Placement Program and its many ramifications, the writers feel impelled to list some recommendations for its operation and improvement. Because the program is flexible, the suggestions must be considered in light of particular school situations. Some of the recommendations can be inaugurated with comparative ease; others are far reaching and will, no doubt, call for further study.

Students Need More Than Ability

Better selection of students for the Advanced Placement classes is urged. Recognition must be given to the fact that ambition and interest are necessary characteristics in the student who is to participate in the plan. Experience has proved that ability alone is not enough. The inertia and indifference of some students of superior native ability, although frequently not impossible to overcome when properly approached, may hamper the teacher and students of the Advanced Placement classes and unduly occupy their limited time.

Careful orientation of students and their parents as to the objective, nature, and scope of the Program is desirable. At the present, the teachers think that they are spending too much time in explanations which could have been avoided by preparation before the student was accepted in the classes.

Extension of the Advanced Placement Program into the elementary schools is recommended. Interest in this trend is exhibited in District 2

at meetings of the principals of the elementary and secondary schools. Students thus freed from the burden of taking high-school work they have already mastered would be able to do more advanced work than would otherwise be possible.

Urge Other High Schools To Adopt the Program

Expansion of the Advanced Placement Program to other secondary schools is wise. This policy would be in harmony with the trend at Senn and throughout the United States. Daily more high schools and institutions of higher learning are participating in the plan. The large attendance of representatives from private and public schools in the metropolitan area at an all-day conference sponsored by Loyola University for the study of Advanced Placement, indicated the intense interest of educators. Northwestern University held a conference for the same purpose.

Extension of the Advanced Placement Program to all the departments for which examinations are offered is advisable. Where a department is hesitant or reluctant to initiate the plan, the administration should help it to understand the program and to provide for its best operation. As a corollary to this recommendation, close interdepartmental cooperation is suggested. Particularly in the language arts and social studies integration is desirable.

Programming Long Sessions Proves To Be Difficult

Careful programming of the students' and teachers' schedules, with special effort to avoid conflicts with other "Honors" classes and attractive extracurricular activities, is imperative. Longer periods, or double forty-minute periods, might be profitably used; our students have clamored for this opportunity. Furthermore, teachers need time for individual meetings with students, careful analyses of their work, and for planning and organizing the content of the courses.

A small budget for work materials, books, tests, and scholarship funds for needy students needed. (A fee of $10 is charged by the College Entrance Examination Board to take each test.) Provision should be made for attendance of teachers at important conferences without burdening their colleagues with their classes and work, and with the schools defraying at least part of the expenses. It is necessary that the Chicago Public Schools be represented at the national meetings of the Advanced Placement Program.

The Advanced Placement Program can be integrated into the present curriculum and can even be more easily incorporated into the changes recently approved by the Chicago Board of Education. Because of the greater emphasis upon longer sequences in the requirements for graduation, students will be better prepared to embark upon Advanced Placement classes. Raised to the status of dignity which the Advanced Placement Program deserves, it will better help to fulfill the dreams of enlightened educators.

The Talented Youth Program

JEAN FAIR

EVANSTON is a community well enough favored to support a high-level educational program. The parents of most of our students have had almost two years of college. A large percentage hold degrees and a good number have done advanced work. They are deeply interested in education. Each year about seventy-five per cent of our graduates enter college. Because of this background and our students' generally high level of academic aptitude, we have been able to offer a strong academic program.

The school has long been interested in providing for its very able students. For a number of years we have had an honor program in mathematics. In music and the arts, outstanding opportunities have been provided for top-level students. Evanston Township High School was one of the eight pilot schools in the School and College Study of Admission with Advanced Standing, now know as the Advanced Placement Program of the College Entrance Examination Board. Recently we have been a part of the Illinois Curriculum Program's Project for the Improvement of Thinking, a program of enrichment in our regular academic program. At the same time a Science Seminar for the gifted in science has grown out of our long-standing participation in the Westinghouse Science Talent Search. Much of what our program does has been summarized in *A Survey of the Education of Gifted Children* by R. J. Havighurst, Eugene Stivers, and R. F. DeHaan published by the University of Chicago in 1955.

In the last three or four years, the school's interest has grown in improving its program for its talented young people. Committees have been organized to give over-all direction to current planning for the gifted. This is referred to at E.T.H.S. as the Talented Youth Committee. A planning committee made up of the college counselor, the chief visiting counselor, the head of the research and evaluation program, the administrative assistant, and the superintendent-principal takes the leadership in our program for the talented youth. To review and help implement plans, there is an advisory committee made up of this planning group; members, often department chairmen, from the academic departments; two department chairmen representing the arts; six members from the guidance department; and the teacher of Science Seminar. This Committee meets as a group about once a month and more frequently as subcommittees. Some of these members have important responsibilities for

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extracurricular activities as well. Sub-committees of the Talented Youth Committee work with other teachers on the several projects which the school is currently carrying on. The Talented Youth Committee also works in co-operation with Dr. Harry Passow and Dr. Miriam Goldberg of the Horce Mann Lincoln Institute's Talented Youth Project to plan steps in developing our program for the talented.

We have tried to involve the parents through our regular program of interpretation of standardized test data by the counselors and through regular parent and teacher contacts. We have kept our parents abreast of our whole school program, including special provisions for the talented, through articles in our publication of "Here's Your High School" and our "Curriculum Guide," both of which are mailed home. There has been communication through the Lay Advisory Council and our PTA's parent education program. However, we have not worked co-operatively with parents in planning our program for the gifted.

The school believes that a sound program for the gifted, or talented, is carefully planned to include consideration of identification, special provisions, continuous and searching evaluation, and revision. It provides for the early identification of high potential in all fields, not just in the academic subject fields. Many criteria are involved. High achievement and high IQ are not the only clues to talent. A program must encourage students to explore their capabilities in a number of areas. Students must be freed from unnecessary repetitions of exercises which may be necessary to clarify and fix principles and concepts for the average students. They must be freed to deal with the highest level of concepts appropriate to their abilities. They must have the fullest opportunity for creative work in keeping with their abilities and interests. At the same time, these pupils must not be arbitrarily separated from the rest of the student body for work in all areas. It is understood that they do not necessarily profit by separation and special provisions in all areas. They must not lose contact with the general student provisions in all areas. They must not lose contact with the general student body. Care should be taken to provide for a well-rounded curricular and extracurricular program. They must not be allowed to concentrate too heavily in single areas to the detriment of their full general education. In addition, they must not be pushed to overwork at the expense of health. In short, the genuinely good program for the gifted, or talented, must marshall the forces of the guidance and curriculum programs to locate the talented in all possible areas, to help them explore their abilities and interests, to enrich and deepen their educational program, and to help them maintain a balance between specialization and a general education. Such a program must be continuously evaluated and revised.

Important also is the initial understanding that a full program of provisions cannot be developed all at once. It must be understood that a full program must grow out of revisions of the present and experimental

provisions. Very early the whole staff must be involved in determining what is meant by talent in concrete form, in identifying tentatively the talented, and in considering their special needs. The methods of identification, provision, and evaluation must be evolved over a period of time through the efforts of the whole staff.

Who Are the Talented?

From our experience, then, a most important first step is to obtain tentative agreement upon what is meant by talented. For us, they are all those pupils with especially high potential in one or more general or specific areas, pupils whose potential cannot be adequately developed without special provisions in the curricular, extracurricular, and counseling programs. Included are the academic and the arts areas and the general area of leadership or human relations. In our school, this group includes about twenty-five per cent of the student body.

We have asked departments to define talent in their fields. While no department is, at present, content that its definition is the proper one, these definitions do allow teachers to proceed with identifying at least most of the students talented in their fields.

At first, teachers, counselors, extracurricular activity sponsors, and home-room directors were asked to contribute names of talented students and comments about them to a master file. This file served as a communication device for trading information about students and for making special assignments of these students. As our work has progressed, however, we have found identification of this sort and contribution of names to a single master file less useful than identification for a purpose; for example, assignment to an honors class, provision for counseling on such a specific problem as making choices among courses and activities to avoid "spreading thin," or inclusion in a project to help under-achievers. Consequently, we are developing new methods of several listings and then communication of information about students with whom we are systematically working in one way or another. It seems important to make identifications on the basis of what the school can actually use at any one time.

However, the committee does circulate to all teachers the names of all students of extraordinarily high intelligence, those whose test scores are at the very extreme; *i.e.*, above 145, in order to give very particular attention to their progress. None of our lists is fixed. Names are added and removed. The school has not found useful any single classification of students as "talented" as distinguished from "not talented." A student may be gifted in mathematics, but not in the field of English, for example. While many students are talented in several areas, the school finds it advisable to look at their more specific capabilities. The school has expanded its honors program so that such classes are offered in whatever departments or at whatever levels they are brought to be desirable.

Department Procedures

For the most part, the mathematics department has relied on acceleration in a customarily and comparatively well-defined sequence of courses. Students now studying some algebra in the eighth grade move through the sequence of courses more rapidly than do those less able. Honors courses in ninth-grade algebra and tenth-grade plane geometry are followed by eleventh-grade honors in advanced algebra courses. A number of such students are invited to enroll in a two-year eleventh- and twelfth-grade sequence of advanced algebra, trigonometry, some analytics, and calculus. However, the mathematics department has not relied on acceleration alone and is currently working on enrichment provisions aimed at developing some greater breadth in concepts throughout the program.

The science department invites able and interested students to enroll in biology as ninth-grade pupils. An honors course in physical science, largely chemistry and physics, in the tenth grade is followed usually by chemistry in the eleventh, and either honors physics or college-level physics in the twelfth. Students in college-level physics must be concurrently enrolled in college-level mathematics in order to make possible the use of calculus. Mention has already been made of the Science Seminar which is held in the second semester of the eleventh and first semester of the twelfth grade and in which students do original research.

Science Seminar is a course in which the superior abilities of talented science students are given opportunity for full expression. The class is conducted on a very flexible basis. Early in the work, students and teacher survey the interests, hobbies, and knowledge to be found in the class. Then each pupil selects a project or projects upon which he proposes to work, after which plans are made to enable each one to have an opportunity to present his work for the instruction of classmates and to receive their suggestions and evaluations. As each student works on his project, progress reports are given and a free discussion ensues in which the teacher participates only as necessary. No project may be selected unless it qualifies on a basis of original research—there must be no redoing of science projects already investigated. For several years, numerous students from this class have entered their work in Science Talent Search and other competitions with outstanding success in both science and mathematics fields. This course is taken in the second semester of the junior year and the first semester of the senior year.

The English department has set up honors classes at the tenth-, eleventh-, and twelfth-grade levels. It tried out one honors class last year at the ninth-grade level for interested and particularly gifted students. The previous year in our English honors at the sophomore level, we tried out several ways of providing for the very able: assignment to an honors class; careful and special provisions for such students within a heterogeneous, regular class; and no special provisions (beyond reasonable common sense) within a heterogeneous, regular class. We did some

systematic evaluation of student achievement and learning conditions in these three different kinds of classes as well as in one regular class from which all of the talented had been removed. Moreover, we looked at the relative burden put on classroom teachers in each of these situations. No significant differences were found among the three ways of providing for the very able (nor, indeed, on the progress of average students either in classes with and without honors students). However, there were indications that very able students might achieve more in a reorganized honors course, presently under way and in process of evaluation.

The social studies department invites interested and able students to enroll in a two-year honors Civics and World History course; students begin the study of some aspects of World History in the ninth grade. There are honors courses in United States History as well as college-level courses in both European History and United States History.

The foreign language department has set up honors courses in Spanish and French. However, the students ordinarily enrolling in Latin and German have either been too few in number or not sufficiently able so that setting up honors courses has seemed inadvisable.

The school also encourages its able students to develop abilities and interests in the arts. Many participate in music activities; for example, a Great Arts course is growing in popularity. Some others participate in dramatics. Many others are part of a leaders' program in physical education. Large numbers of the very able are participants, often in leadership positions, in all kinds of extracurricular activities. A special course in leadership training is offered.

Selection of Students

In general, enrollment in honors classes is compulsory, not voluntary, in courses in which gifted students, as college-bound, must enroll; for example, English, United States History, the first two or three years of mathematics, and a foreign language (except as noted above). Enrollment is voluntary in courses which students select themselves; for example, science, and World History. Enrollment in all college-level courses is voluntary. While the majority of the very able are enrolled in several honors courses, enrollment in one does not necessarily mean enrollment in another.

Criteria for selection of honors and college-level classes undergo constant revision in order to improve our placement procedures. In general, we use several criteria, although these vary among departments: scholastic aptitude scores, reading test scores, mathematics skills scores, teachers' recommendations both about achievement and maturity, counselors' recommendations, and school marks. The criteria are aimed at identifying students for whom regular classes do not seem to be appropriate, not just those who are to be considered "bright" by some arbitrary

and absolute standard. At the present, we are working particularly with the junior high schools to improve both early identification and placement at the ninth grade. We have set up a reviewing procedure for students who have sought to elect more than one college-level class. Their capabilities are matched with the demands of the rest of their curricular and extracurricular programs. In a number of cases, they are asked to make a choice between or among college-level courses. When there is evidence that students are misplaced in or out of any of these honors or college-level courses, the school makes possible either transfer or appropriate honors work in some regular class.

The school offers college-level courses as a part of the Advanced Placement Program in English, physics, mathematics, Modern European History, and United States History, and will offer them, according to demand and interest, in other sciences and foreign languages. Each of these courses is a one-year course. Students in such courses ordinarily take the Advanced Placement Program examinations and, on the whole, have had successful and beneficial results. The school is satisfied with the opportunities which such courses have offered students. But college-level courses are not the only provisions made for the very able at the twelfth-grade level. Honors courses are also available. While much of what has been done for the talented has been concentrated in honors or college-level classes, many regular classes have also worked out experiences suitable for those of high ability.

The school does weight marks. Honors course marks of "1" (high on our scale of "1" through "6") are averaged as ".8," such marks of "2" as "1.8," and so on. College-level course marks of "1" are averaged as ".5"; such course marks of "2" as "1.5." The weighting is made on the supposition that more work is required for top marks in such courses, particularly college-level courses, and that class ranks in these days of more difficult college admission should reflect this more thoughtful work. This weighting does not actually change the class ranks of many students.

There has already been a good deal of development in making courses for the gifted appropriate for them. However, the school continues to work on ways of improving them. It is our intention to help students improve the quality of their work, not merely the quantity. At present we are using the data collected from the surveys of self-attitudes and school attitudes mentioned below to work in a systematic and organized fashion to develop further ways of encouraging independence in work, creative problem-solving, the critical acceptance of values, and integration in learning. Mere sectioning in honors classes is not enough; it is the learning experiences within them which count.

Selection of Teachers

The Talented Youth Project has developed no formula for selecting teachers of the gifted. Some departments rotate honors courses among members of their departments; others have preferred to let some teachers

specialize in teaching honors courses. It seems obvious that our teachers of the gifted ought to be able to think ably at the least in their own subject field, and preferably in wide areas, to be able and willing to work out courses actually appropriate for the talented, to be interested in them, and interested enough to give a great deal of individual attention, and to get satisfaction from encouraging independence and intellectual curiosity. A good job of teaching gifted students requires a great deal of work. No reduction in teaching load is provided for teachers of the gifted, although college-level classes usually have some fewer students than normal. Generally speaking, our staff members get enough satisfaction from their work with talented students to justify their work.

From what our own staff has found from knowing our talented students and from the data collected in surveys of self-attitudes and school attitudes, a sub-committee of our Talented Youth Committee has developed a list of problems commonly encountered by the gifted in our school. This list has been circulated among counselors. We are continuing to work during this year in improving the services counselors give our gifted students. However, the school does not have special counseling services for the talented; counseling is provided for all students. Still the specific problems which counselors talk over with the talented are often somewhat different from those discussed with other kinds of students.

Evaluating the Program

In cooperation with the Horace Mann-Lincoln Institute, the school has administered three previously mentioned inventories to students, based on an interview-study of under-achievers, over-achievers, and high-achievers. Both the interview study and the inventories were designed to give insight into the needs of students and the adequacy of the provisions for them. The inventories surveyed self-attitudes, school attitudes, and peer attitudes. The data from these inventories were analyzed to compare high-achievers, basically bright under-achievers, over-achievers achieving at a high level, low-achievers of low ability, and the random school population. The inventories yielded a great deal of valuable data on which present projects for the talented and others are now largely based. Although the data are too comprehensive to summarize here, it can, at least, be reported that talented students expressed satisfaction with courses and activities which really challenged their abilities. They want to learn and appreciate their opportunities.

One of the current projects stemming from what was found from these surveys deals with under-achievers. A number of teachers have agreed to give special kinds of attention to some identified under-achievers; we plan to use their experiences for leads about what kinds of attention are fruitful with particular "kinds" of under-achievers. Moreover, we are examining under-achievers' school marks patterns longitudinally by going back to pre-high school and forward to college records again for leads

about the kinds of teachers, courses, course structures, and the like which appear to be successful with particular "kinds" of under-achievers. There are plans under way also for studying at some depth a very few under-achievers to give us greater insight into their needs. The school is also working with Dr. Merle Ohlsen and Dr. Fred Proff of the University of Illinois in group therapy for ninth-grade under-achievers, aiming both to help these students and to train counselors to carry on group therapy. The school is also beginning work on setting up a "humanities seminar" for students interested and talented students in this area.

The school's interest in providing for the talented has not interfered with interest in other students. In fact, work with the gifted has probably stimulated interest in providing better for low-ability students. There are several other projects currently under way for improving opportunities for average students.

Since the school is sometimes asked about the cost of the Talented Youth Program, it should be said that there is no specific item in the school budget for the education of gifted young people. However, it is obvious that there are additional expenses—those arising from smaller classes and special books and equipment. There is, of course, special planning that members of various committees must take from other activities to do. Costs are allotted to various items in the budget, such as subject departments, teachers' salaries, and the like. The staff finds it stimulating and rewarding to help students develop in ways promising for them and for society.

The Advanced Curriculum

GERHARD ANGERMANN

Background and History

JUNE of 1958 completed the fifth year of an experimental study at the Central High School known at present as the Advanced Curriculum. Purpose of the study was to develop a curriculum suitable to the requirements of a highly motivated group of very able students. In 1953, Central was one of 17 schools that pioneered in this study. Five years later, more than 200 schools have developed similar programs. It is interesting to note that the project was initiated by college men, and developed as a joint effort of school and college personnel, supported by grants from the Ford Foundation. It is also appropriate that the program is now under the sponsorship of the College Board. This body performs the following important services:

1. It encourages schools to develop programs of advanced study.
2. It urges the colleges to recognize the efforts of the schools by granting advanced standing and credit.
3. It administers the testing program which measures the work of the schools.
4. It encourages closer relations between the schools and colleges by sponsoring joint school and college conferences in all academic studies.

The Advanced Curriculum at Central High

The Central High School has been a special school for many years. It serves the whole community of Philadelphia in providing a strong academic preparation for college. It attracts a large proportion of able and highly motivated students. For this reason the Advanced Placement Program was particularly suited to the Central High School. There were sufficient numbers of students of high mental ability to make possible the rostering of special classes within the framework of the existing school organization.

In order to prepare students in the Advanced Curriculum for college-level work in the twelfth grade, they are rostered in special classes at the beginning of the tenth grade. Selections are made on the basis of academic achievement in the ninth grade, I.Q. and other standardized test scores, teachers' recommendations, and parental approval.

At Central High School students are not permitted, as they are in most other schools where similar programs are in operation, to elect those sub-

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jects in which they desire to do advanced work. In order to enter the program they must take advanced work across the board, in all subjects. This restriction, known at Central as the "block roster," has been the subject of considerable debate among the faculty. The following statement from a committee report states the position on this matter of the majority view: "The committee feels that it is not in the best interests of the student to permit him to elect for advanced study only those subjects in which he is interested, or seems to have a natural aptitude. The committee distinguishes between ability and capacity, and feels that it is the school's responsibility to develop all of a student's capacities."

However, in connection with the block roster, it was felt by all that a certain flexibility which would provide for a number of controlled exceptions would strengthen rather than weaken the program as a whole. The "block roster" met its test last May, when the first block-rostered group took the examinations. We have a report from a committee on Advanced Study at Harvard expressing an opinion on this matter. The committee made a follow-up study of the achievement of students who had entered Harvard with Advanced Standing. The high caliber of work done by these boys subsequently, indicated that they could have, and therefore should have, elected to do advanced work across the board, instead of electing, as they did, advanced work in only one, or perhaps two, subjects.

Numbers of Students Served

The numbers of our students that have been rostered in our advanced courses comes to about nine per cent of our student body. This figure corresponds to the percentages of our students who have in past years been cited for Scholastic Honors, for which an average of 90 is required. Class size has averaged 25-30 for the tenth grade, and 20-25 in the senior (college-level) classes. This means that close to 200 students are involved in the program each year, corresponding again to about nine per cent of the total school population.

Dr. James B. Conant stated after his visit here that twenty-five per cent of our boys could profit by advanced study. I think he meant that this figure was applicable for all high schools, and not just Central. John Daly, in a recent telecast on this subject, cited fifteen per cent as a figure, also applicable to high schools in general. These figures are not comparable with our nine per cent figure, since our student body is not a normal or average group. Translated, this could mean that as much as fifty per cent or more of our student body should be included in the advanced program. In a sense, of course, our whole school program is of an advanced character, compared to programs of other schools generally.

The experience of the past five years leads us to believe that for the advanced work we are trying to do to meet the standards set by the Advanced Placement Examinations of the College Board, our figure of

nine per cent is probably a good one. Half of our advanced students can do the work in stride; the other half work under considerable pressure.

Meaning of Advanced Study

It becomes clear that advanced study in any subject can be set at various levels. Many schools and school systems throughout the country now boast of having advanced study programs. Where educational programs are measured only by input, that is, by courses of study, a so-called advanced program may or may not have much meaning. Members of our faculty who have observed "advanced" programs in other schools have stated that the level of the work does not compare to the level of the work done in our regular classes. A course of study may be made to look very impressive. A recent poll taken among College Admissions Officers shows that in the evaluation of credit of students transferring from one college to another, the title of the course taken was one of the most significant factors. Where the title was impressive enough, full credit was usually granted.

The work of the Advanced Curriculum at Central is measured by the Advanced Placement Tests of the College Board. When we examine some of the questions that appear in these examinations, we begin to get some idea of the high achievement that is expected of these students. The questions also reveal the essential aims of what we call advanced study. It is not the acquisition of factual learning or knowledge that is tested, but the proper application of learning to the solution of problems. Questions are mostly of the essay type, requiring a high degree of skill of interpretation and analysis. How you arrive at a solution is equally as important as the solution itself. *How* you think about a subject is just as important as *what* you think about it; not *who* said it, but is it true?

In English Composition, for instance, students are required to write three one-hour essays on topics such as the following: "The quest for money and the quest for pleasure are two goals which increasingly, for half a century at least, have determined the cultural pattern of this country. Two other goals, the quest for power and the quest for erudition, are equally inadequate; but to the pursuit of the latter two more than a few people are already turning as they find themselves increasingly bored by what has become the American way of life." This is a quotation about which the student is to develop through comparison and contrast his analysis of the conditions in American life today which result from the pursuit of these objectives. The student may choose, if he prefers, to write about the following quotation: "Science is a cemetery for dead ideas."

Here is a typical question from an examination in English Literature: "A successful work of literature endeavors to produce such delight from the whole as is compatible with a distinct gratification from each component part; in other words, every scene, every character, and every

action must contribute to the total effect." The student is to demonstrate his understanding of the above principle by analyzing two or three literary works to discover their degree of unity.

In American History, one hour is devoted to objective testing, and two hours on essay-type questions. Here is an example of the essay-type: "Those who have property, and those who are without property, have ever formed distinct interests in society. A landed interest, a manufacturing interest, a moneyed interest, together with many lesser interests, grow up of necessity in civilized nations, and divide them into different classes. The regulation of these varied and conflicting interests forms the principal task of modern legislators." The student is to consider the validity of this statement of James Madison with regard to the periods of American History between 1852 and 1861, and between 1901 and 1912.

A typical question in the French Examination asks the student to compare two 16-line poems with regard to subject matter, form, the moods and feelings evoked by each poem, and the means utilized by the poets to evoke them. Students are permitted to write the answer to this question in English.

Questions in the other languages follow the same pattern. Mastery of the language is assumed. The examinations test the students' capacity for literary interpretation and critical analysis of representative works of the major writers in the language. Works are to be considered from the point of view of style, techniques, and aesthetic qualities, and as documents of the time in which they were written, keeping in mind the ethical and social issues which may be involved.

In mathematics and the sciences, the examinations, of necessity, tend toward the objective, but not entirely. Here is an essay-type question from a chemistry examination: "In a recent article on the chemical industry in *Fortune Magazine* the following statement appeared, ". . . Practically everything in the chemical industry springs from four utterly simple raw materials: coal, sulfur, limestone, and salt—plus that relative newcomer, petroleum, and the celebrated free goods, air and water." The student is to discuss this statement and illustrate with specific examples what the writer may have had in mind.

The foregoing examples should suffice to indicate the rigor of the College Board Testing Program. At the same time they also serve to give some idea of the kind of achievement that must be demanded of the boys in our advanced courses, if they are to be successful in these tests.

Evaluation of Results

The success of the Advanced Program may be measured in two general ways. *First*, in terms of scores achieved in the testing program in comparison with the scores of other schools, and in comparison with the scores achieved by college freshmen taking the same tests; and *second*, in terms of advanced standing and credit granted to these students when

they enter college. In the last two years, Central High-School students have achieved a 90% success in the College Board tests of which sample questions were read. Of fifty-six tests taken in 1956, fifty were passed. Of 103 tests taken in 1957, 90 were successfully passed. It is a practice in some schools to permit only such students to take tests who are sure to make a good score. At Central all students in the advanced courses are expected to take the examinations, and they do, with very few exceptions. We feel that we should be more concerned with the measuring of the quality of our courses than the promotion of impressive scores.

Comparison of Scores with Other Schools

Scores made by Central High-School students compare favorably with those of the best schools in the country. In comparing scores with other schools, it must be kept in mind that our boys take more examinations. Where students concentrate their time and energies on only one or two advanced subjects, the achievement is bound to be higher. The average number of examinations taken in all the schools has been 1.8 per student. The average taken by our students has been 3.4. In last year's examinations, one of our students took seven Advanced Placement examinations, —English Composition, English Literature, American History, French, Mathematics, Chemistry, and Physics. Three of our boys took six exams, nine took five, five took four, seven took three, three took two, and nine took one. Thirty-six students took a total of 125 tests. When the first block-roster group take their examinations next year, the numbers will be even higher, provided the new schedule of fees will not deter them. Up to now the fee has been ten dollars, regardless of the number of examinations taken. Beginning next year, there will be a registration fee of five dollars, and a fee of eight dollars for each test taken.

One other factor that should also be considered in any comparative study of our scores with those of the ranking private schools, is that many of the students who enter those schools already hold high-school diplomas.

Comparison with College Scores

The same tests that are given to students of the Advanced Placement Program are given each year to representative groups of college freshmen. The schools have always outscored the colleges in these tests. Last year, for example, 69% of the school candidates scored well in the English Composition examination as compared to only 36% for the college candidates. In literature the schools scored 52% as against 24% for the colleges; in mathematics 59% compared to 50%, and American History 67% compared to 53%. It is only fair to say, in making this comparison, that the college students tested represented a cross-section of A, B, C, and D students, whereas the school students are a highly selected group. Before we consider the matter of the advanced placement and credit that these students get as a result of these tests, it might be relevant to make a statement here regarding the validity of the Advanced Program here

at Central. If some of our students are mentally equipped to do college-level work in the senior year, as these comparative scores demonstrate they can, then they *should* be doing college work, not high-school work, in the twelfth year.

Advanced Standing and Credit

The success or value of the Advanced Placement Program may also be measured in terms of advanced placement or credit granted to our students by their colleges. Most of the students who have been graduated from the program have used advanced credit to take more advanced work at college. This means, generally, that they work on the sophomore level in the first year, on the junior level in the second year, and so on, making it possible for them to begin their graduate work in the fourth year.

It is possible, of course, to use the credit for acceleration, or the saving of time, and several of our students have done this. One of our students who was graduated here in June of 1954, earned his B.A. degree at Kenyon in June 1957, three years later. Last June he completed his first year at medical school. Several of our Advanced Program students have been given full junior-year status at the University of Chicago. The University of Pennsylvania has been most cooperative in the granting of advanced credit. Two years ago, ten of our graduates, besides receiving credit in other subjects, received a full year's credit in mathematics. At the end of their first semester in second-year mathematics, three of the ten were so far ahead of the class that they were transferred to a third-year class in mathematics usually reserved for engineering students. All three were leading this class at the end of the first month. Under conventional schooling, these students would have been doing first-year college mathematics their first year.

Each succeeding year our students report more grants of credit. Much of this is due to the efforts of the College Board, and also as a result of the fine performances achieved in college by these students. A follow-up study by the College Board revealed that better than 95% of these students continue to rank in the upper sixth group of their classes.

Last year, of thirty-five students who took the examinations, eleven reported one-year credit in mathematics, with two reporting a half-year's credit. Nine reported credit in English literature, eight in English composition, four in American History, five in German, two in French, one in Latin, and one in chemistry. This does not include Advanced Placement from colleges where school policies do not permit the granting of credit.

General Evaluation

It is difficult to translate these figures into percentages that would show how many of our students are getting how much credit for the college-level work of the Advanced Program. Totals for last year show that thirty-five students received a year's credit in 42 subjects. This does not

count Advanced Placement, which would raise the total by a third. Credit in 42 subjects would be the equivalent of ten students gaining a year's work in college. If the rate of increase in credit continues from year to year as it has in the past, it is quite likely that within another five years, about forty of our students each year would gain a year. Those who are interested in balancing this gain against the expenditure of the time, money, and energy that the program entails, can decide whether, on this quantitative measurement, the program is worth while.

To be considered, of course, is the quality of the education these boys are getting. Quality in an education is not so easy to measure. Some indication of it was suggested in the kind of questions that appear in the examinations, cited earlier in this report. We can only hope that the kind of standards that are set for these students at Central High School and the kind of success they have achieved at college, will be reflected in the kind of men they will turn out to be, in the quality of the leadership they will give in their chosen professions, and in the quality of the service they will render in their communities. It is to these goals, rather than in numbers of courses passed, credits earned, or time saved, that teachers sometimes dedicate their lives. At the least, our efforts in this experiment to give our ablest students the best education that our resources afford should be a source of satisfaction to all of us.

June, 1958

Elmer Field, President
Gerhard O. Angermann, Director

Advanced Programs for Able Students

CHARLES O. AUSTIN, JR.

ALTHOUGH Rock Island Senior High School in the past has been meeting adequately the needs of its students in preparing for college entrance, work, or home, the administration and faculty have felt that continuing study and evaluation of the curriculum should lead to responsible changes when they seemed desirable.

During the past two years, the Rock Island Plan has been formulated: a curriculum program to develop the abilities of all students, with special emphasis on courses for the gifted.

A significant increase in the college-entrance rate of Rock Island graduates—from 29 per cent of the graduates 10 years ago to 46 per cent at the present time—has indicated the importance of college-preparatory and advanced-placement courses.

At Rock Island Senior High School, there has been a significant increase in the enrollment in college preparatory courses as compared to the average increase of high-school enrollment. While the total enrollment during the past five years has increased 36 per cent, enrollment in chemistry has increased 165 per cent; foreign language, 145 per cent; advanced algebra, 119 per cent; physics, 86.5 per cent; and in the over-all mathematics program, 80 per cent.

Classes for Gifted

Classes for gifted students have been introduced gradually. The first attempt toward a program took place several years ago with the division of the senior English program into two areas: one for college preparation and the other a terminal program.

The first offering of an advanced placement course at the college level was begun four years ago, when senior world history was offered as an elective. A college textbook was selected, and students who were contemplating college entrance were encouraged to enroll in this course. Students are required to take notes, make outside reports, and take essay-type examinations. Counselors and administrators, in conferences with Rock Island graduates on college campuses, have been informed that the students consider this course the most valuable offered in high school toward college preparation.

Charles O. Austin, Jr. is Principal of the Rock Island Senior High School, Rock Island, Illinois. This article appeared in the May 1958 issue of *Illinois Education*, pages 346-47. It is here reprinted with the permission of the editor.

Dual Chemistry Program

Three years ago the chemistry program was divided, and a regular college preparatory chemistry course was offered for students who were going into science and engineering. A second course, Chemistry N, was introduced to give special training to girls interested in nursing. Three sections of Chemistry N now have been taught; more than 45 girls have entered nursing during these three years. Several units in the course have been changed to fit better a nursing program. The girls are most enthusiastic about the course, and the regular chemistry program can prepare better the college-bound students.

This past year, the highest-ranked 30 students in the sophomore class were identified and offered a program which would give them the required economics and government in the junior year and American history in the last year of high school. Arrangements have been made with Augustana College in Rock Island to grant by examination six semester hours of college credit. Textbooks and materials have been studied, and the course is being offered this year.

Students who desire to participate in the college placement program were interviewed, tested, and counseled before being permitted to enroll.

Parental counseling is also available. Consent is required from the parent, so both the high school and the home will have an understanding of the educational program being selected by the pupil.

In addition to the new courses now offered at Rock Island High School for a college placement program, study has been given to other areas. The high school is now ready to incorporate in the Rock Island Plan the advanced placement program of the College Entrance Examination Board, which will enable academically talented students to undertake work according to their ability. It is felt that colleges will welcome students who are ready for advanced placement and advanced courses. Such a program of cooperation extends educational opportunities for able and ambitious students by coordinating high-school work with college entrance.

Advantages of Program

The advanced placement program in the secondary school enables a gifted student to stay in high school with his own social group and yet receive college credit or advanced placement for high-school work. It does not remove his leadership from the high school; yet it gives him an opportunity to develop his leadership to an extent which he could not do in an accelerated entrance program. The program means high standards of scholastic achievement at the secondary-school level. If the student does not use his courses for advanced placement credit, he will have had training which will help him prepare for college board examinations required by many colleges.

This year, the advanced placement program is in its fourth year as a part of the College Entrance Examination Board project. The program

operates through a director who works with the General Supervisory Body Commission on advanced placement. The program begins with college courses given at secondary schools. Examinations are in eleven subjects: literature and English composition, French, German, Latin, Spanish, American history, European history, mathematics, biology, chemistry, and physics.

Schools Make Own Decisions

Only the college which the candidate is entering receives the advanced placement examination materials for granting credit. Each school makes its own decisions regarding credit and placement. Many colleges—and the number is growing—give both credit and advanced placement to students who perform satisfactorily in college-level courses in high school and on the advanced placement examination. This is the program that will be used for credit at Augustana College. Some departments at the University of Illinois are now giving college placement credit; it is hoped that this will soon be university-wide. During this past year, 212 high schools in the United States participated to some degree in the college-placement program.

The Rock Island Plan will necessitate a revision in the daily schedule of periods at the high school: seven one-hour periods in contrast to the present schedule of six one-hour periods. The extra period of the school day will be for the able students to develop a program which can not be scheduled in the present 30-hour school week. It is not contemplated that the school day will be extended for the faculty nor for students not interested in an enriched program. The additional hour is planned for the first period in the day, starting about 8 A.M. and permitting a dismissal time only slightly later than at present. This will give more daily use of facilities.

During 1957-58, the high school has identified the top Algebra I students who entered as sophomores in September 1958. This group as sophomores are offered an elective year of geometry and an elective year of advanced algebra. In their junior year, students in this program will elect solid geometry and trigonometry, and in the senior year they will take an advanced placement program of 12 weeks each of analytical geometry, college algebra, and calculus. The student highly qualified by ability and interest in mathematics will be able to take five years of mathematics in high school. The regular mathematics program of geometry in the sophomore year, a semester of algebra and solid geometry in the junior year, and college algebra and trigonometry in the senior year will continue to be offered as part of the elective program.

For students interested in advanced placement in science, chemistry and physics will be offered as electives in the junior year with a college chemistry course offered in the senior year. If a student is taking the advanced placement program in science, at his request he may be excused

from required biology in the sophomore year. This choice would permit a student to complete a second year of foreign language prior to entering the advanced science program.

Favor Limited Participation

It is thought that unless a student is exceptionally able, he should be limited to participation in two advanced programs at one time. If a student is participating in both the mathematics and science programs, it would necessitate carrying a fifth solid subject in the junior year. However, many students carry a program of this type.

Four years of Latin and three years of Spanish are offered in the curriculum. At present, only two years of French are offered. The Spanish program for advanced placement depends upon enrollment; it is hoped that future enrollment will be sufficient so that interested students may take the subject for four years.

Advanced placement courses permit students to plan, according to their own abilities and interests, a program to develop their highest potential. Such a program can give the high-school student who participates an enriching and challenging experience. The most important item in the program is the teacher in the classroom who inspires with superior instruction. Good teachers are eager to meet the challenge of high-ability classes.

Fits Into Existing Schedules

The advanced placement program can fit well into the present curriculum as it is understood by the community, and complement the program now being offered. It can be offered without increasing the staff; with the present teacher shortage, this is most important. In science, there will be an increase in cost for material; this could be covered by charging a low registration fee.

Education can not remain constant, if it is going to serve the community and meet the changing needs of boys and girls. The Rock Island Plan will serve better the students of our high school. More and more colleges are taking favorable action with respect to the advanced placement program; as college entrance becomes more complicated, colleges will be eager to have students for advanced placement, because they have already shown themselves to be capable students.

Perhaps in the future a student can, while in high school, stay at home and yet receive up to 20 or 25 hours of college credit. This is the type of student who is going to spend time in the graduate or professional school. This program can be significant in the total cost of preparing for a profession. It will serve the youth who is faced with more than a four-year educational program, and cut down the total college cost. High-school students will not be wasting time, but will be moving in an area where their talents can be effectively challenged.

Honors Program at Pennsbury Senior High School

FOR very able and strongly motivated students in the junior and senior years, Pennsbury offers an enriched program in the fields of English, social studies, mathematics, and science. Interested students, approved by a faculty committee, may take all or any of the courses offered. Class sizes are small, most under fifteen, and the work is conducted in laboratory, seminar fashion with an emphasis on quality. The program of honors courses, instituted on the twelfth-grade level in 1954-55, includes English, Problems of American Democracy, chemistry, and mathematics. The program has been extended to the eleventh-grade level in the subject areas of English, world history, physics, and algebra.

The students in the honors program elect these special courses, but only those are admitted to the program who have demonstrated, in their regular classes, evidences of strong motivation for learning, acceptable or superior study and work habits, and good learning ability. Once admitted into honors courses, students continue as members in good standing as long as they continue to meet the high standards of performance which they have set for themselves. They may, at any time, request transfer into regular classes; or, in the event that students do not perform well, the instructor may request such a transfer for them.

The honors courses cover not only the same subject material offered in their parallel, regular courses, but also much more, both quantitatively and qualitatively. Since these well-motivated students grasp concepts and ideas readily, enjoying more challenging tasks, their investigations of problems posed in the courses are likely to lead them into both extensive and intensive studies. Individual research project, extensive reading, and challenging discussions are frequently the results of these students' heightened interest in their work; and the pursuit of learning for many becomes a real adventure, a voyage of self-discovery.

As in the regular courses, enrichment of the students' learning experiences is the central aim of these honors courses for the individual student; his needs and his abilities must not be neglected. The wider scope, the quickened pace of the learning process, and the enthusiasm of students and teachers working together make possible the building of full, rich, rewarding lives.

This description was received from the Senior High School of Yardley, Pennsylvania, R.D. No. 1. Richard L. Currier is Principal of this high school.

Summaries of Courses

English 11—The honors course in English 11 helps students to master the mechanics of both written and oral expression; to develop the capacity for greater understanding and greater enjoyment of literature; to develop habits of independent, critical, and creative thinking; to experience the democratic process as it functions in the classroom; and to cultivate those moral and spiritual strengths which can enrich their lives.

The work in composition includes study of the elements of grammar, the construction of effective sentences, punctuation, diction, style, and logical thought organization in the paragraph and in the longer theme. In addition, experience with the forms of written and oral composition is provided through the study and the use of exposition, description, and narration; through the writing of précis, social and business letters, and research papers; and through the preparation of all types of speeches. Weekly themes provide abundant and regular practice in composition. Topics are drawn from the student's experience and from his study of literature.

The work in literature involves a study of the writings of authors the world over and an investigation of their uses of the types of literature. Readings are organized under such central themes as Youth and Age; Justice and Injustice; Death and Sorrow; Words and Music; Laugh and the World Laughs with You; Love; The Quest for Adventure; World Religions and Philosophies; East is East and West is West; and Newspapers Mold Public Opinion. A balance is sought between the emphases on composition and literature, and an integration of the two phases of English is effected.

World History—The objectives of the honors course in world history include helping students to understand a variety of historical patterns, stimulating students to comprehend the nature and the causes and effects of historical change. Through wide reading of many historical sources, through individual study, and through writing about and discussing historical problems, the students are helped to learn to handle data, to investigate, to evaluate, and, finally, to draw conclusions on the basis of fact rather than on prejudice. Four major areas of study are designated; the nature and the development of nationalism; the growth of western civilization, of oriental despotism, and of Moslem Theocracy; contemporary problems which have resulted from shifts in the loci of power in modern states; and the great dynamic ideas which have shaped modern and contemporary affairs.

Physics—The honors course in physics provides the student with an opportunity to examine for himself, by means of experiment and research, the principles of physical science, utilizing the scientific method, learning to think critically, and sharing his discoveries with other members of his class. Seven units of study comprise the course: Introduction

to the Study of Physics; Force and Motion; Sound Energy; Heat, Magnetism and Electricity; Sight Energy; and Atomic Energy.

Algebra II—Providing an enriched experience in mathematics, Algebra II encourages the student to seek growth as an individual and as a member of a group. Such growth involves a clear understanding of the reasons for fundamental operations, a knowledge of the development of mathematics, proficiency in the use of subject materials, and an appreciation of the nature and the importance of mathematics. Study begins with a review of the fundamental operations and an introduction to the use of the slide rule. Following these, topics include linear equations, type products and factoring, fractions, exponents and radicals, quadratic equations, functional variation, progressions, the binomial theorem, logarithms, complex numbers, theory of equations, inequalities, probability, infinite series, and partial fractions. Running parallel with the investigation of these topics is an investigation of the history of mathematics. Much of this investigation is conducted along the line of individual research.

EIGHT SCHOOLS PLAN ADVANCED ENGLISH PLACEMENT PROGRAM

At least eight Michigan high schools began an advanced English Placement program this fall, following a special University of Michigan summer workshop. Michigan communities in which the new English program will be undertaken are Ann Arbor, Battle Creek, Berkeley, Dearborn, Detroit, Sturgis, Trenton, and Wayne. Fourteen high-school English teachers participated in a month-long workshop at the University, and made preliminary plans for high school English programs which will approach a college-type course. Students who successfully complete these courses in high school may receive college advanced placement or credit. This means that in some colleges the students who pass the advanced placement exam given each spring may either be exempt from freshman English or will be placed in an advanced section.

The New Unknown Quantity—XX

EVELYN M. WHITE

A PROGRESS REPORT ON A COURSE FOR ACADEMICALLY GIFTED STUDENTS

A YEAR too early to claim any dubious inspiration from the sputnik crisis, two 10B classes of high P.L.R.'s were organized as a gifted pupil project at John Adams High School in Cleveland in the fall semester of 1956. The rising consciousness—in the public's, and particularly the parents', minds—of the increasing number of scholarships being made available through the National Merit Foundation and other sources offered incentive for trying to help our best pupils be better able to take advantage of their opportunities and thus realize their full potentialities as individuals and citizens.

These classes came into being quickly under the inspiration of our principal, Alva R. Dittrick. Their birth was unattended by any formal ceremonies of policy statements, philosophizing, or curriculum planning. They began simply to take on life and form, blessed by the sincere hopes of faculty godparents that, by giving them a strong and enriched diet of academic preparation, the school might more fully develop their talents so that they would have a better chance to share in the national awards, and others, and ultimately to share their gifts for the national good.

No sales talks or offers were made in advance to the graduating classes of the contributing junior high schools. The counselors took note of P.L.R.'s of 115 and up, high standard test scores, good ninth-grade achievement, pupils' personalities, attitudes, and plans and marked the most promising for the special groups. Junior high-school counselors were asked to check. Since there was no doubt of the meaning of an X group in the past, the label of XX was decided upon as conveying an unmistakable, if yet unproved, meaning.

The program assigned to these pupils was the usual college preparatory one, consisting of English, geometry, biology, and a foreign language. The language classes, of necessity, included all pupils electing these subjects, and so could hardly be considered experimental for the XX pupils. Therefore, this article reports what was done in three subjects only—tenth-grade English, geometry, and biology.

The first selected group is now in the twelfth grade. Three other groups are following in the footprints of the first. This report presents

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the composite work and findings so far of teachers in each of the three departments.

English

Since no special course of study was defined in advance and since English teachers with five other classes are already heavily burdened, the teachers privileged to have XX classes have had to feel their way along from semester to semester. Their efforts, however, have proceeded along these premises:

1. The love of reading and pleasurable satisfaction in it should be continually fostered and stimulated so that the habit of reading on one's own as widely as possible will be formed.
2. Most of the regular literature should be covered, but since bright pupils read and comprehend contents much more rapidly and accurately, more time should be spent in deepening their understanding of finer points in the material and in developing their critical powers so that higher standards for reading and for composition writing may evolve.
3. Pupils' general culture and experience should be enriched and broadened wherever possible by the introduction of background material of all kinds—history, music, art, modern cultural events, and media of communication.
4. Creative ability and originality, which these pupils possess in greater degree than others, must be called into play in thinking, talking, writing, and criticizing, and given equal encouragement with that for the absorption of others' ideas.

In the 10B the outside reading for the semester was inspired by a Cleveland Public Library pamphlet entitled "Great Novels," distributed to the class after being edited slightly by the teacher. Pupils read extensively among these and wrote about them. Revised reports were then put into a folder, with an enlarged facsimile of the library pamphlet for a cover, for others to read and follow up, if they wished. At the end of the year, pupils recommended one or two of these books that they had liked especially, and the class went off for vacation fortifid with a mimeographed list of books recommended by their peers. The local librarians must have wondered why *The Cloister and The Hearth* and *The Moonstone* and others were in more demand than usual that summer.

The second semester a circulating library of paperback modern books (recommended ones) was used to make reading infectious. One future business man in the group served as purchasing agent; a couple of girls charged the books out and in. Informal book talks in small groups took place from time to time, and reading had "caught on."

Vocabulary needed to be given some special impetus. Pupils took turns submitting a new word a day, with an illustrative sentence. The class secretary kept the list and provided the class with a mimeographed copy. The texts listed below have been used for intensive reading:

Adventures in Appreciation—Cook, Loban and Baxter (a basic text anthology)
A Tale of Two Cities—Dickens

Short Stories—Schweikert
Modern Biography—Hyde
Essays—Chamberlain
Doorways to Poetry—Untermeyer
Magic Casements—Carhart
Lorna Doone—Blackmore

While with regular classes a selection from these would be used, the XX's ranged over them without hesitation, and outside reading along the same lines was planned to follow, particularly in the case of biography, poetry, short stories, and essays. More time was spent in trying to get a deeper understanding and a keener appreciation of subtle points than in covering the contents, and thus to train pupils to evaluate the material read and develop good standards of criticism for reading and for their own writing, too. A single example will have to suffice. At first, pupils objected to the numerous small details in *Three Strangers* by Thomas Hardy, but, after the class discussion, they realized the contribution these details make to the plot, the atmosphere, and the impression desired.

For enrichment material beyond the usual texts, *Mythology and Folklore* by Henry I. Christ was used with enthusiasm by pupils and teachers. This gave a variety of needed background information and helped to develop an appreciation of our rich heritage. Subsequently, pupils became acquainted with the name and fame of Edith Hamilton through the pocketbook edition of her *Mythology*.

Effort was made to correlate other arts with literature and break down barriers which might exist in pupils' minds. One large group visited the Art Museum when the Pierpont Morgan collection of rare books and first editions was on exhibit there. Another time a class saw the excellent English movie of *Oedipus Rex* at the Heights Art Theater. Not only did pupils derive inspiration from these two single experiences, but they were also introduced to the type of attraction these places had to offer them and could return many times on their own.

A committee was choosen to alert the class every Friday to programs and events of interest in Cleveland for the next week, such as TV and radio, movies, lectures, symphony, music, and even sports.

One class now has a term subscription to the *Atlantic Monthly*, and reports from other reputable magazines are occasionally made. All of these devices, of course, offer opportunity for follow-up oral and written work.

It must not be overlooked that much enrichment is provided by other phases of the English department such as Dramatics, Theater Production, Radio, and Journalism. Many of the XX pupils found outlets for their special flairs and interests in one or more of these courses in different semesters. These XX's often are the ones who have the most to contribute to these activities and are, in turn, enriched by the opportunities offered there to develop their creative talents more fully in a specialized way.

Much of the composition work, oral and written, was related to the class reading. Subjects to exercise pupils' imaginations as well as reports to call for organization of ideas and critical thinking were used. In connection with *Mythology and Folklore*, pupils wrote or told original myths and "tall stories" or dramatized them. The study of short stories, essays, and biography led to the writing of original efforts of these kinds. Occasionally a film such as *The Hunter and the Bear* was used to evoke a purely personal response in the form of a poetic or prose impression. Outside reading reports stressed personal reactions and critical evaluations. Themes on subjects calling for organization or original research within the novel, or this novel and another of Dickens, followed the study of *A Tale of Two Cities*. Longer papers on a variety of subjects of the pupils' own choosing from "Hypnotism" to "Higher Mathematics" gave further opportunity for library research and organization of material.

To complete this report on activities in XX English classes, mention should be made that certain sections of the workbook, *Using Your Language*, were designated for use in each semester to review points of grammar and to afford practice on technicalities of sentence structure and composition.

If these various groping efforts put forth fruit in the form of a love of reading, critical powers of analysis and judgment in reading, enlarged backgrounds and horizons, and a creative urge, our best pupils are being well-equipped for the long march to scholastic achievement.

Geometry

Since the basic subject matter of a course in plane geometry is not readily open to experimentation or revision, differentiation for the XX classes consisted of a shortening of the time spent in covering the usual material, the introduction of more complex problems and supplementary material, and the use of the analytical approach in the teaching method.

Progress was rapid without the "drag" of slower pupils because little time needed to be spent on an explanation of statements of facts, detailed directions and review of class work, drill and repetition, and homework problems, which pupils were able to solve by themselves or with a minimum of teacher help. Therefore, there was ample time to broaden and deepen the usual course of study by the use of more difficult originals following each theorem, by the introduction of material and problems from surveying, navigation, solid geometry, and beginning trigonometry, and by the discussion and assignment of special projects involving applications of geometry not ordinarily used in regular classes. Among the most popular of these geometrical recreations were the three famous problems of antiquity, the construction and use of early surveying instruments, the theory of the sextant and its use in determining latitude and its use in indirect measurement, the construction of a sundial, and the study of geometrical fallacies. The history of mathematics also suggested projects, construction, diagrams, and reports in geometry. The field

of worth-while projects for additional class work and extra outside assignments has practically no limits.

The transfer of time from routine recitation work to thought-provoking investigation means that greater attention was given to the major aims of mathematical instruction—training in reasoning, spatial imagination, and particularly those types of thinking likely to be most useful in life situations.

The teachers' approach to the solution of a new situation in geometry was that of exploration by the analytical method of discovering proof rather than clarification of the textbook development. Use of this inductive process challenged the natural curiosity of XX pupils, gave an opportunity for individual thinking, and helped to eliminate hasty, inaccurate reasoning and to replace it with critical thinking. Pupils were thus guided in discovering for themselves something of general mathematical relationships so that they might know how mathematical knowledge has come into being. By this training in inductive reasoning, which is the heart of the "scientific method," they will then have an understanding of the method of scientific research, which will guide them in developing any creative talents they may have.

The XX classes quickly grasped the fact that the study of geometry is a game to be played by certain fixed rules. They realized the full significance of the if–then relationships; that is, *if* certain things are true, *then* certain conclusions follow inevitably. Thus, a truer concept of deductive reasoning, also one of the strong arguments for the study of geometry was developed. Pupils were led to transfer both reasoning processes to the solution of personal experiences. They were quick to detect faulty reasoning in everyday conversations. The habit of critical thinking in geometrical situations helps to build the bridge leading to critical thinking in other situations. If, being fully aware of its efficiency, they continue to transfer the analytical procedure to problems in other fields, the teaching of geometry has realized its greatest purpose. This purpose offers attainments valuable to anyone but particularly valuable to gifted individuals who can make a real contribution in the creative, executive, or professional fields. When geometry is taught with the purpose of leading the way and directing the method, bright pupils quickly accept it as an exciting and valuable experience.

Biology

In the field of science, it seemed logical to try to determine first how much common background and training the XX pupils had been given already and to build the tenth-grade work upon those findings. A survey which was made of their past experiences in science work from the sixth to the tenth grades revealed no very satisfactory similarity or continuity. In view of their rather "mottled" science careers so far, it seemed best to adhere to the pattern of the general biology course with its emphasis on the application of biological knowledge to the life of the individual

student in his environment. Additional learning situations to "stretch" their abilities were to be provided in the form of related projects which would give the pupils an opportunity of *doing* science in addition to *reading about* science. Thirdly, there was to be a conscious emphasis on training them more meticulously in the basic attitudes, skills, procedures, and thinking processes that make up the "scientific method" so as to lay the necessary foundation for further science work.

No time was lost in stimulating interest in the subject of biology. At the conclusion of the 9A orientation program in June, the department teachers assembled the XX's in the library and gave them mimeographed lists of suggested summer projects, places of interest to visit, and library books for summer reading which would be useful in certain projects. Results of this summer work were brought into the next semester's course at appropriate times.

The Northeastern Ohio Science Fair, which is held annually in Cleveland each spring, provided an easy opportunity for launching pupils on individual science projects early in the fall semester. Much class time was spent on motivation for them by the use of slides, movies, demonstrations, reports, and discussions of appropriate subjects for exhibit. The defining of the individual problem and the gathering of materials were frequent topics for class discussion. Tentative reports and diagrams were called for and individual conferences were held. Sometimes the entire class period was used to study a particular project to be entered. Students who had won previous awards visited classes to report their experiences in preparing projects by showing the complete evolution from chance ideas which interested them to accomplished exhibits.

Other devices used to add background or depth material to the standard biology course include:

1. Observation of plant and animal studies in the classroom
2. Study of landscaping of the school grounds
3. Subscriptions to science publications (optional)
4. Purchase of graphic survey of biology (optional)
5. Field trips to the Museum of Natural History, the Health Museum, the Zoo, the City Health Department, the metropolitan parks
6. Visual materials (films, slides, microscope work)
7. Talks by people in fields related to biology
   a. Former students now in nurses' training programs
   b. City officials (shade-tree commissioner)
8. Individual pupil recommendations (on basis of interest, ability, and personality)
   a. Volunteer work in local hospitals in summer and after-school hours
   b. Laboratory work under the hospital pathologist
   c. Summer study at the Cancer Research Institute at Bar Harbor, Maine

It was hoped that stimulation of interest through projects and enrichment of background by supplementary materials would help these gifted pupils realize the needs and the opportunities in the scientific field. However, there was a constant effort to have the course include other

values, even for those whose interests and talents will lead them elsewhere than to a career in science. They are the discipline of the precision, accuracy, and logical thinking required in scientific training, the inquiring attitude, the patient and thorough investigation and experimenting, the truthful observation and association of cause-effect relationships at all times, and the drawing of logical conclusions.

The following procedures were used in this effort to inculcate in these pupils fundamental habits of scientific study and research:

1. Practice by means of mimeographed material in reading science subject matter rapidly and well
2. Study of word formations by means of lists of the prefixes, suffixes, and combining forms found in the more difficult words of biological subject matter
3. Continual emphasis on a careful delineation of every problem, an evaluation of the possible methods of solving it, and the actual taking of steps to solve it
4. Some dissections of preserved materials (frogs, grasshoppers, and rats from biological supply houses)
5. The use of microscopes and projected material for the detailed study of some topics
6. Tests requiring essay-type answers with high standards of sentence structure, spelling, and diction (rather than repetition of memorized words and phrases)
7. How-and-why type of questions in class to encourage pupil interpretation of scientific phenomena rather than explanation by the teacher

To sum up, since the fundamentals and factual information offered to meet pupils' needs in the usual pattern of the biology course were easily mastered by these XX pupils in much less time, it was found possible to enrich the same general pattern with additional lines of interest without developing a new pattern. At the same time, sound and basic habits of scientific work were interwoven to strengthen the foundation of future science work. Lastly, the individual projects provided the stimulus to creative work and critical thinking, which are the end products to be developed in these pupils if they are to put their superior talents to the highest use.

Progress Appraisal

Has the XX project been successful so far? Of course, we realize any definite pronouncement of its success would be premature, since the first group is now only halfway through their high school course, but the enthusiastic attitude of both pupils and teachers concerned may be taken as grounds for an encouraging prognosis. Pupils have expressed themselves as liking the competition, being stimulated by the "stepped-up" work, enjoying the opportunity for more self-expression, finding the classes more informal and more "fun." Those who have been in Major Work classes feel that otherwise they would have lost some of the benefits of their earlier training. They are appreciative that the higher demands of the XX classes give them a better idea of the college standards they will have to meet, and they enjoy a sense of responsibility in facing up to more challenging work.

Teachers, of course, enjoy more responsive classes who give them a sense of greater accomplishment and satisfaction. Curiously enough, they have felt a wholesome influence on other classes. The word of the mythology book, the great novels, the science projects, and so on has percolated through, and others are at least interested. Then too, the example of one scholarship-minded group among their classmates has a salutary effect on many others.

We are in the position of shaping up our aims in this project as we have moved along for three semesters rather than measuring our success against prescribed ones. The records of the graduating classes of June, 1959, and thereafter will begin to tell the story in results on test scores, scholarships, and college acceptances. Of course, even then, we will not know objectively how much more this segregated training has done for them. Their future contributions and the contributory causes will be difficult to estimate. But if their readiness for college or career entrance is more promising than usual, we shall be content to let them work on the future achievements, and we shall turn back with confirmed faith to the oncoming XX's.

Our aim has not been acceleration in the sense of completing courses in less time or telescoping courses. We have not gone into the Advanced College Placement program as yet, although it may be something to consider for the most talented in various subjects in the senior year, especially with the pressure building up now for more teachers, more scientists, more trained people in many lines—sooner.

We are confirmed in the belief that the XX grouping should offer an opportunity for a *quality* performance in education. Even our best pupils need a more thorough training in English, geometry, and biology, in this case, as a basic foundation for more thorough advanced work. There is naturally a saving of time in these classes in covering routine work, but we believe the time saved should be used for enrichment and deeper understanding. Therefore, our teachers have taught basically the same courses but with broader scope and greater depth. They have used many of the usual techniques but with a more intellectual application in accord with the greater intelligence of the pupils. One point agreed upon was that the additional work called for should give greater understanding, not just added practice.

Several teachers characterized their XX classes as "more like those in the good old days" (before complete mass education, juvenile delinquency, rock-'n'-roll, perhaps), meaning that they felt they did a more thorough job with evident signs of success in what they taught. One physics teacher summed up a half term's work thus, "I taught more physics and harder physics, and we were able to do more and harder problems."

Coupled with our dedication to quality and thoroughness, which the homogeneous grouping of XX's makes possible, is our belief that certain

emphases should be kept in the foreground in teaching these classes; namely, encouraging their curiosity, stimulating critical thinking, urging creative work, when possible, and, above all, giving them a realization of the pleasure and the importance of such work. In the last analysis, it is only through these approaches that education is going to bring their special gifts to fruition.

A few problems have madè themselves apparent already in the form of difficulties which have arisen:

(1) Should a set course be prescribed for these pupils? A variety of subjects presents great difficulty for scheduling, but all high abilities are not pointed in the same direction. It appears wise to prescribe the tenth-year's program and then to identify areas of strength and ability by means of differential aptitude tests, recommendations, and conferences and provide for differentiation in the eleventh and twelfth grades. Probably the group should be subdivided into two parts then: the math-and-science talented and the language-and-arts inclined.

(2) Which takes precedence—prescribed courses or extracurricular ones? These pupils are the very ones to enter into activities most readily and to become the leaders. Activities, in turn, such as dramatics, journalism, student council, and others have much to offer them in development and enrichment. One solution might be to offer them as extra minor subjects in certain set semesters —Dramatics, Journalism, or Radio in the tenth, Journalism or Theater Productions in the eleventh—or, at least, to limit the pupils to one such course at a time.

(3) How may we achieve the desired continuity in this project? Superior teachers are needed who know how to challenge and encourage high intelligence. A time allowance should be given them for planning procedures, providing for additional material, and correlating the work of the various semesters. They should carry the same class for two semesters. Meetings with teachers of such classes in neighboring unior high and elementary schools would help to unify the background and give greater certainty of what to build on.

World situations and national needs that have changed even since the recent founding of XX at John Adams give us reason to feel that our efforts to give the best opportunity to our best students are justified and are directed toward the right end. Since XX's comprise one segment of "all the children of all the people" now in our schools, they are included, of course, in our general philosophy of meeting needs and developing capabilities to their fullest extent. However, the fullest extent for them means leadership, skilled work, creative work, and demands college and professional training. Of course, they may not all go to college—we cannot always win against family attitudes, romance, military service, and the temptations of quick money, but it is our duty to give them the necessary background for that which their ability entitles them. Besides, in our complex and often topsy-turvy life today, no one knows when interrupted training for a career may be picked up again and carried on. If we help these gifted students to establish a broad and deep and sound educational foundation in high school, we have equipped them to meet any aspect of future life on their own high level.

Gifted High School Students Today—Junior Diplomats Tomorrow

WILLIAM C. ROGERS
and BARBARA STUHLER

ARE there "gifted" students in the social studies in our high schools, or can high ability be identified only in mathematics and the physical sciences? Can the student who stands at the top of his class in academic ability in world affairs make a future contribution to our nation along with his fellow students who excel in science?

To answer these questions, take a metropolitan area of one million people with seventy-five public, private, and parochial high schools and ask each school to nominate one or more of its top students in world affairs. Have each student read a 230-page background paper prepared by and for some of America's leading experts on United States foreign policy. Bring them together in a two-and-a-half day residential seminar for nineteen hours of lecture and discussion with an expert faculty. At the end of the seminar, ask them to forge their conclusions into a formal report. During and after the experiment, evaluate the process with the students and the faculty. If you follow these directions, what would happen and what kind of an answer would you get to your two questions?

This report details just such an experiment conducted in March of 1958 by the University of Minnesota's Center for Continuation Study in cooperation with the Minnesota World Affairs Center and the American Assembly. The story begins in the winter of 1956. This was many months before "Sputnik" resulted in "crash" science education programs and storms of criticism about the presumed lack of attention to the gifted student in our high schools.

James Treglawny, a Minneapolis public school educator (and chairman of the Minneapolis School Commission on International Understanding and World Peace) came to William C. Rogers, Director of the World Affairs Center at the University of Minnesota, with a problem that had been plaguing him. There were a number of projects and programs designed to challenge and recognize the student gifted in the physical and biological sciences; yet little was done for the outstanding youngster interested in the social sciences. It seems to Jim Treglawny that there should be opportunities for these students to meet and talk

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to others with similar high abilities and strong interests in world affairs. They usually received little challenge from other students in their own schools. Bill Rogers agreed. For another year, the idea haunted both men. They talked about the problem with their colleagues in the public schools, the universities and colleges, and with citizens concerned about the need for greater understanding of world affairs. Out of these talks and further conversations between themselves, an answer finally began to take shape.

Why not adapt the residential seminar idea for the gifted high-school student interested in the social studies? The residential seminar has been looked on with much favor as a useful technique for adult education in world affairs. It has been used in the last few years, particularly by the American Assembly at Columbia University, the Midwest Seminar on Foreign Policy of the Universities of Illinois, Michigan, Minnesota, and Wisconsin, and the Residential Seminars on World Affairs at Lafayette College. The purpose is to provide adult "opinion leaders" with an opportunity for sustained and intensive discussion of foreign policy issues in a setting free from the interruptions which customarily beset such men and women. Rogers and Treglawny decided to put the proposal to a test before a group of their peers.

In the early summer of 1957, a small committee of teachers and educational administrators was invited to a luncheon to hear the proposal. The host was John N. Peyton, chairman of the Federal Reserve Board in Minneapolis before his retirement and now chairman of the board of directors of the World Affairs Center. He had already enthusiastically endorsed the proposal. As it turned out, so did the others at the luncheon, and they moved quickly to put the suggestion into action.

A budget was prepared and several weeks later, a grant of $4,125 from the Hill Family Foundation of St. Paul was made to the University of Minnesota. The initial committee was expanded to eighteen; nine from public and private schools; six from the University of Minnesota, and three from the World Affairs Center. The Center for Continuation Study, University of Minnesota, with Fred E. Berger as director, is the first University residential adult education agency in the United States. It has had long experience in planning residential conferences and institutes and was asked to sponsor the seminar with the cooperation of the World Affairs Center. At the same time, the American Assembly of Columbia University was asked to lend its conference pattern, to provide the basic reading and to join as a cooperating sponsor. The American Assembly agreed to do all these things, and more. The subject of American foreign policy in the Far East had been among the top subjects proposed for discussion by the committee. The selection of the Assembly's *The United States and the Far East* as the seminar's working paper was, therefore, a natural choice. The planning committee moved into high gear.

Obviously, the first requisite was to make sure of the support and endorsement of the school authorities. Members of the planning committee sought to insure this support by writing letters, engaging in formal conversations, and by speaking to groups or organizations of school officials. With this introduction, superintendents, principals, and social studies department heads began anticipating an invitation to participate in a High-School Residential Seminar on the Far East. Questions of transportation, financial considerations, and manageability determined that Seminar attendance be limited to seventy-five. The schools invited, therefore, were the seventy-five public, private, and parochial schools in the five-county metropolitan area surrounding and including the Twin Cities—St. Paul and Minneapolis.

Accompanying the first letter, sent to the schools early in December 1957, were application forms and an instruction sheet. It was suggested that nominations from each school be made by a committee of social studies teachers and that students recommended *"should have an American Council on Education examination score of 70 or more and rank scholastically in the upper one fourth of their class. They must have a keen and absorbing interest in world affairs."* A total of forty-nine schools (thirty-nine public, four private, and six parochial) sent in 150 applications. The list had to be cut in half.

Meanwhile, a distinguished faculty was being asked to participate. Heading the list was one of America's most eminent scholars in Far Eastern affairs, Nathaniel Peffer of Columbia University. Two authorities from the University of Illinois agreed to come—Royden Dangerfield, Associate Provost and formerly director of the Institute of Government and Public Affairs, and Norman Graebner, Professor of History, and author of the recent book, *The New Isolationism*. Lawrence S. Finkelstein, Director of Studies of the Carnegie Endowment for International Peace, was just back from a trip to Asia, and he accepted. From the University of Minnesota came Professors Werner Levi, Charles McLaughlin, and John Turner (political science), Richard Mather (oriental languages), Chester Wood (former Chief of Educational Reconstruction for the Republic of Korea), and Philip Siegelman (with the United States government in China in the immediate post World War II period). Scott Johnston, head of the Department of Political Science at Hamline University in St. Paul, completed the list.

To everyone's delight, Henry Wriston, President Emeritus of Brown University and now President of the American Assembly, agreed to come for the Seminar and to chair the final plenary session as he does for the adult Assemblies.

Meanwhile, arrangements had been made to hold the Seminar meetings in the Minneapolis Institute of Arts and to house students and faculty in the brand-new Fair Oaks Motel across the street. Both the Institute and the Motel border a lovely park in a residential district away from the downtown area.

Finally, the four social studies teachers who were to serve as Panel Moderators and lead the discussions were selected on the basis of recommendations by the Minnesota Council for the Social Studies. They were: Mrs. Frances Anderson, Marshall High School, Minneapolis; Roy Meyer, Mounds View High School, New Brighton; John Schuiling, Bemidji; and Miss Elsie Sebert, Albert Lea. The teachers represented the northern and southern parts of the state, a big city high school, and a suburban high school.

Now it was time to select the seventy-five participants from the 150 applicants. One from each school which recommended students was accepted, and no school had more than three representatives. Of the seventy-two students for whom American Council on Education examination scores were available, all had scores of over 85% (83% scored 95% or higher; 3% between 90 and 95%; 10% between 85 and 90%). Of the sixty-nine students for whom high-school rank was available, all ranked 85% or higher (78% ranked 95% or higher; 19% ranked between 90 and 95%; 3% ranked between 85 and 90%). It was abundantly clear that these were, indeed, gifted students.

Schools and parents were notified. A complete list of the students, a copy of *The United States and the Far East*, copies of the time schedule, "ground rules" for student behavior, and biographical information about the faculty went to each school.

Suddenly it was 10:00 A.M. on Thursday, March 27, 1958, and the students began to arrive at the Motel to register. Everyone who was supposed to come, came! Neither illness (influenza was prevalent at the time) nor last-minute conflicts interfered with a perfect attendance. The group included forty-three boys and thirty-two girls. Most of them were seventeen years of age, although there were two sixteen-year olds and a few who were eighteen.

At 11:00 A.M., the Seminar opened with appropriate official remarks, introductions, and instructions. The students, faculty, and observers were reminded that the purpose of the Seminar was not just to discuss the Far East, but to discuss issues, knowing that the final result was to be a paper incorporating the recommendations of the participants for American foreign policy in the Far East.

Each of the four panels was to appoint a student chairman and recorder who along with the teacher-moderator would meet with Professor Charles McLaughlin to prepare the draft. Mr. McLaughlin "drifted" from panel session to panel session to get an over-all impression of the discussion. From these impressions, he prepared a draft statement. At three meetings, the eight students and four teachers approved, corrected, or modified the draft in some fashion to reflect as accurately as possible the thoughts and decisions of each panel.

The panels selected their chairmen and recorders and began their deliberations. The faculty experts were rotated from panel to panel so that the students could have an opportunity to talk with them all.

Following the first session on Thursday afternoon, one of the senior faculty members commented that he had kept track and it was not until the final three minutes that any student made a comment not to the point. He added parenthetically that, from his experience, one could not make this claim for comparable adult groups. (He also suggested that six of the group would be immediately welcome as members of his advanced graduate seminar.)

Thursday night, the participants—students, faculty, and observers—gathered to hear a speech by Dr. Royden Dangerfield on "Who Makes Foreign Policy?" The question period was not desultory, and Dr. Dangerfield was surrounded by an intense group long after the meeting was formally adjourned. By the end of the first day, it was apparent that the Seminar had picked up momentum—the first act had clearly prepared the audience for a promise of greater things to come.

There was no cause for disappointment during the long second act of Friday. The panel discussions went on all day from 9:00 A.M. to 5:00 P.M. The teachers who worked as panel moderators and the faculty resource personnel may have been tired, but not the students! They plunged with great enthusiasm into a Friday night party of square dancing, singing, and even a touch of rock and roll. The student chairmen and secretaries missed the first part of the party because they were closeted with Professor McLaughlin going over, with great care, the final draft paper. By this time, each panel had completed its discussions of Japan, Korea, Communist China, and Taiwan. The party was over at midnight, but not the talk—boys gathered in boys' rooms; the girls gathered together in different groups—and the bull sessions on foreign policy went on into the small hours of morning.

Saturday morning, the final plenary session, with Dr. Henry Wriston in the chair, took place. The stage was set for the climactic third act. It was a fitting climax. There were discussions, disagreements, and progress. United States foreign policy on Japan, Korea, China, and Taiwan was debated with both heat and light! Changes were made. The final report was approved at 12:00 noon, in the nick of time for the scheduled Seminar adjournment. Dr. Wriston was, for the students, a hero in the last act—his firmness, wit, and charm captivated them all. They, in turn, had long since captivated Dr. Wriston as he sat in, as an observer, through their preliminary panel discussions.

Now it was time to pack and go home. Parents came to pick them up as they had come to bring them. Their children's enthusiasm was so immediately conveyed that many fathers and mothers stopped to thank those responsible for administering the Seminar.

A number of observers had been present for parts or all of the Seminar, including representatives of schools and state educational organizations. One of these, Mrs. O. S. Savig of the Minnesota Congress of Parents and Teachers, wrote for her organization's bulletin, "Many times during the discussions, I had to jog my memory to remind myself that we were

listening to high-school students, *not* a gathering of University post-graduates, as their intellectual energies and performance seemed to indicate."

Perhaps a few quotes from the evaluation questionnaires which the students were asked to fill out can best reflect their opinions of the Seminar experience.

> The most stimulating experience was the association with the other students and with the faculty. Meeting such intelligent people of such widely diversified beliefs was a real treat.

* * * * *

> It changed the attitude that there is only one right answer to each problem in Asia.

* * * * *

> The fact that everywhere I went, I met adults and people my age to whom I could talk on an equal level; who were not shocked if I broached on intellectual questions; and who were interested in an exchange of views above the social, everyday level.

Over and over again, in the answers to the questionnaires, three points stand out: (1) the stimulation each student experienced from associating with equally talented peers; (2) the appreciation of the intellect, information, and wit of the faculty; and (3) the complexity of issues for which no easy solution can be readily found in thinking about our foreign policy in Asia. The number one recommendation made by an overwhelming majority of students was that more time should have been allotted to permit more comprehensive discussion of the questions on the agenda. The sponsors viewed this suggestion with a mixed reaction of pain and pleasure, the pain of exhaustion, and the pleasure of student endorsement.

Some students sent in letters of appreciation. This one from a senior in a private girls' schools is typical:

> I am writing to thank you and everyone else who made the high-school Seminar possible. It was the most stimulating and informative experience I have ever had. I was especially impressed by the calibre of the men and women who helped run the Seminar. Besides being well-informed and rational people, they had wonderful personalities and were fun to talk to. I will never forget Mr. Berger's joining in the singing on Friday night, nor Dr. Wriston's skillful and witty handling of the session Saturday morning. I sincerely hope that you will have another Seminar next year. I wouldn't want anyone to miss such an opportunity. Thank you again.

Members of the faculty also sent in thoughtful letters of retrospection. Their suggestions paralleled many of the students'. The most frequently mentioned recommendation was to allow more free time for informal, small group discussions between faculty and students and among the students themselves. Here are some excerpts from their letters:

I was overwhelmed by the high level of the student participants. They were extremely intelligent, thoughtful, above all, articulate. I was impressed by their willingness to tackle any problem in an inquiring spirit, although there were of course a few who came with fixed views which were not altered essentially during the course of the discussions. The student body was the greatest asset and the main credit for a successful show should go to them.

• • • • •

In my discussions with the students, I formed the opinion that the Residential Seminar was a most valuable experience for them. Several told me that it was the high point in their four years in high school. All with whom I talked thought they had learned much concerning United States Far Eastern policy, but, more important, they felt they had been forced to think. One student indicated that he was very surprised that he had been obligated to change his mind concerning some aspects of United States policy. He asked why it was that so many people seemed to be unable to face facts.

• • • • •

I felt that the participants at the Minneapolis Seminar constituted one of the most able groups of students it has been my pleasure to associate with. They were carefully selected and they seemed to have done a good deal by way of preparation. I cannot say that they were well-informed, but they certainly had tried to become informed. They were frank and honest, willing to gain new knowledge, to weigh the facts, and to arrive at their own conclusions. Moreover, they were willing to battle for what they believed to be the best solutions.

The repeated hope expressed by both students and faculty that future Seminars be planned has not fallen on deaf ears. The planning committee has already met and is formulating a comprehensive proposal which it hopes may lead, some day, to the adoption of the Seminar technique not just in Minnesota but around the country. This pioneering experiment demonstrated that there is indeed "something" that can be done to challenge the interest of the gifted high-school student in the social sciences. The committee agreed that our schools contain many students gifted in their understanding of world affairs and that their abilities are a precious asset to an America faced with the problem of world leadership in a dangerous and climactic time. The corps of trained leadership which will be faced with the public policy decisions of tomorrow must be developed today.

Advanced Placement in the Member Colleges, 1958-59

A SUBSTANTIAL number of colleges, among them many colleges which are members of the College Board, permit qualified entering freshmen who have received college-level instruction in secondary-school courses to begin their college studies in those subjects at the regular sophomore level. Many of these colleges also grant college credit for this advanced school work. In each case the student's eligibility for advanced course placement or credit, or both, is determined by his college, which may ask that he take the Advanced Placement Examinations of the College Board.

Some colleges have long been willing to consider individual requests for advanced placement and will continue to do so. In recent years, however, the College Board's Advanced Placement Program has enabled numerous schools and colleges throughout the country to cooperate in developing the means by which able and ambitious students may take advanced school courses and the Advanced Placement Examinations to qualify for advanced placement in college. The examinations are given by the College Board once a year in the spring.

The following colleges have by past action or by stated policy indicated willingness to grant placement, or credit, or placement and credit to students who have done creditably in a college-level course taken in the secondary school and who have done well in the appropriate College Board Advance Placement examination. Secondary-school teachers should consult college catalogues for individual policy statements concerning the award of placement, credit, and placement and credit. Where such statements are lacking, the principal should write directly to the college to ascertain the college's policy.

ALABAMA
Spring Hill College, Spring Hill

ARKANSAS
Hendrix College, Conway

ARIZONA
Arizona State College, Tempe
University of Arizona, Tucson

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CALIFORNIA
California Institute of Technology, Pasadena
California State Polytechnic, San Luis Obispo
Claremont Men's College, Claremont
Deep Springs College, Deep Springs
Immaculate Heart College, Los Angeles
Long Beach State College, Long Beach
College of Marin, Kentfield
Menlo College, Menlo Park
Mills College, Oakland
Occidental College, Los Angeles
College of the Pacific, Stockton
Pomona College, Claremont
St. Mary's College of California, St. Mary's College
San Diego State College, San Diego
San Jose State College, San Jose
Stanford University, Stanford
University of California, Berkeley
University of California, Riverside
University of California, Santa Barbara
University of Redlands, Redlands
University of Southern California, Los Angeles
Pacific Union College, Angwin

COLORADO
Colorado College, Colorado Springs
Colorado State University, Boulder
Colorado School of Mines, Golden
Colorado Woman's College, Denver
Regis College, Denver
U. S. Air Force Academy, Colorado Springs
University of Colorado, Boulder

CONNECTICUT
Annhurst College, Putnam
Connecticut College, New London
Fairfield University, Fairfield
Mitchell College, New London
New Haven State Teachers College, New Haven
St. Joseph College, West Hartford
Teachers College of Connecticut, New Britain
Trinity College, Hartford
University of Connecticut, Storrs
Wesleyan University, Middletown
Yale University, New Haven

DELAWARE
University of Delaware, Newark

DISTRICT OF COLUMBIA
American University, Washington
Catholic University, Washington
Georgetown University, Washington
Trinity College, Washington
George Washington University, Washington

FLORIDA
Barry College, Miami
Rollins College, Winter Park
Stetson University, De Land

GEORGIA
Agnes Scott College, Atlanta
Georgia Institute of Technology, Atlanta
Shorter College, Rome
University of Georgia, Athens

ILLINOIS
Augustana College, Rock Island
Barat College of the Sacred Heart, Lake Forest
Bradley University, Peoria
De Paul University, Chicago
Elmhurst College, Elmhurst
Illinois College, Jacksonville
Illinois Institute of Technology, Chicago
Knox College, Galesburg
Lake Forest College, Lake Forest
Loyola University, Chicago
MacMurray College for Women, Jacksonville
Monmouth College, Monmouth
Mundelein College, Chicago
Northwestern University, Evanston
Parks College of Aeronautical Technology, East St. Louis
Principia College, Elsah
Rockford College, Rockford
Rosary College, River Forest
Shimer College, Mount Carroll
University of Chicago, Chicago
University of Illinois, Urbana
Wheaton College, Wheaton

INDIANA
DePauw University, Greencastle
Earlham College, Richmond
Hanover College, Hanover
Indiana Technical College, Fort Wayne
Indiana University, Bloomington

St. Joseph's College, Collegeville
Saint Mary's College, Notre Dame
University of Notre Dame, Notre Dame
Valparaiso University, Valparaiso
Wabash College, Crawfordsville

IOWA
Clarke College, Dubuque
Cornell College, Mount Vernon
Grinnell College, Grinnell
Iowa State College of Agriculture and Mechanic Arts, Ames
Loras College, Dubuque
State University of Iowa, Iowa City

KANSAS
Baker University, Baldwin City
Kansas State Teachers College, Emporia
St. Benedict's College, Atchison
University of Kansas, Lawrence

KENTUCKY
Centre College of Kentucky, Danville

LOUISIANA
Louisiana State University and Agricultural and Mechanical College, Baton Rouge
Newcomb College, New Orleans
Tulane University, New Orleans

MAINE
Bates College, Lewiston
Bowdoin College, Brunswick
Colby College, Waterville
Nasson College, Springvale

MARYLAND
Goucher College, Baltimore
Hood College, Frederick
Johns Hopkins University, Baltimore
Loyola College, Baltimore
Mt. St. Agnes College, Mount Washington Station, Baltimore
Notre Dame of Maryland, Baltimore
St. Joseph College, Emmitsburg
St. Peter's College, Baltimore

MASSACHUSETTS
Amherst College, Amherst
Assumption College, Worcester

Boston College, Chestnut Hill
Boston University, Boston
Bradford Junior College, Bradford
Brandeis University, Waltham
Cambridge Junior College, Cambridge
Clark University, Worcester
Emmanuel College, Boston
Gordon College, Beverly Farms
Harvard University, Cambridge
Holy Cross College, Worcester
Jackson College, Medford
Lasell Junior College, Auburndale
Massachusetts Institute of Technology, Cambridge
Mount Holyoke College, South Hadley
Newton College of the Sacred Heart, Newton
Radcliff College, Cambridge
Regis College, Weston
Simmons College, Boston
Smith College, Northampton
Stonehill College, North Easton
Suffolk University, Boston
Tufts University, Medford
University of Massachusetts, Amherst
Wellesley College, Wellesley
Wheaton College, Norton
Wheelock College, Boston
Williams College, Williamstown

MICHIGAN

Albion College, Albion
Hope College, Holland
Kalamazoo College, Kalamazoo
Marygrove College, Detroit
Michigan College of Mining and Technology, Houghton
Michigan State University, East Lansing
University of Detroit, Detroit
University of Michigan, Ann Arbor

MINNESOTA

Carleton College, Northfield
Gustavus Adolphus College, St. Peter
Hamline University, St. Paul
Macalester College, St. Paul
St. Catherine College, St. Paul
St. Olaf College, Northfield
University of Minnesota, Minneapolis

MISSOURI
Drury College, Springfield
Lindenwood College for Women, St. Charles
Maryville College, St. Louis
Missouri School of Mines, Rollo Campus, Columbia
St. Louis University, St. Louis
University of Missouri, Columbia
Washington University, St. Louis

NEBRASKA
Creighton University, Omaha
Doane College, Crete

NEW HAMPSHIRE
Colby Junior College for Women, New London
Dartmouth College, Hanover
St. Anselm's College, Manchester
University of New Hampshire, Durham

NEW JERSEY
College of St. Elizabeth, Convent Station
Douglass College, New Brunswick
Drew University, Madison
Georgian Court College, Lakewood
Newark College of Engineering, Newark
Princeton University, Princeton
Rutgers University, New Brunswick

NEW MEXICO
New Mexico College of Agriculture, State College

NEW YORK
Alfred University, Alfred
Bard College, Annandale-on-Hudson
Barnard College, New York City
Canisius College, Buffalo
Cazenovia Junior College, Cazenovia
City College of the City of New York, New York City
Clarkson College of Technology, Potsdam
Colgate University, Hamilton
Columbia University, New York
Cooper Union, New York City
Cornell University, Ithaca
Eastman School of Music, University of Rochester, Rochester
Elmira College, Elmira
Fordham University, New York City
Good Counsel College, White Plains

Hamilton College, Clinton
Harpur College, Albany
Hobart and William Smith Colleges, Geneva
Hofstra College, Hempstead
Houghton College, Houghton
Hunter College of the City of New York, New York City
Iona College, New Rochelle
LeMoyne College, Syracuse
Long Island University, Long Island
Manhattan College, New York
Manhattanville College of the Sacred Heart, Purchase
Marymount College, Tarrytown
Nazareth College, Rochester
New York University, New York
New York State Teachers College, Cortland, Oswego, and Oneonta
Notre Dame College, Staten Island
Polytechnic Institute, Brooklyn
Pratt Institute, Brooklyn
Queens College of the City of New York, Flushing
Rensselaer Polytechnic Institute, Troy
Rosary Hill College, Buffalo
St. John Fisher College, Inc., Rochester
St. John's University, Brooklyn
Skidmore College, Saratoga Springs
State Agriculture and Technical Institute, Morrisville
Syracuse University, Syracuse
Union College and University, Schenectady
University of Buffalo, Buffalo
University of Rochester, Rochester
Vassar College, Poughkeepsie
Wells College, Aurora
Westchester Community College, White Plains
Yeshiva University, New York City
Pace College, New York City

NORTH CAROLINA

Catawba College, Salisbury
Davidson College, Durham
Duke University, Durham
Meredith College, Raleigh
Salem College, Winston-Salem
University of North Carolina, Chapel Hill
Woman's College, University of North Carolina, Greensboro
Elon College, Elon College
North Carolina State College of Agriculture and Engineering, Raleigh

OHIO
Antioch College, Yellow Springs
John Carroll University, Cleveland
Denison University, Granville
Heidelberg College, Tiffin
Hiram College, Hiram
Kenyon College, Gambier
Lake Erie College, Painesville
Miami University, Oxford
Muskingum College, New Concord
Oberlin College, Oberlin
Ohio State University, Columbus
Ohio Wesleyan University, Delaware
Rio Grande College, Rio Grande
University of Cincinnati, Cincinnati
University of Dayton, Dayton
Western College for Women, Oxford
Western Reserve University, Cleveland
Wilmington College, Wilmington
Wittenberg College, Springfield
College of Wooster, Wooster
Case Institute of Technology, Cleveland

OKLAHOMA
Oklahoma State University, Stillwater
Phillips University, Enid
University of Oklahoma, Norman

OREGON
Linfield College, McMinnville
Reed College, Portland
University of Oregon, Eugene
University of Portland, Portland

PENNSYLVANIA
Allegheny College, Meadville
Beaver College, Jenkintown
Bryn Mawr College, Bryn Mawr
Bucknell University, Lewisburg
Cedar Crest College, Allentown
Chestnut Hill College, Pittsburgh
College Misericordia, Dallas
Dickinson College, Carlisle
Drexel Institute of Technology, Philadelphia
Eastern Baptist College, St. Davids
Elizabethtown College, Elizabethtown
Franklin and Marshall College, Lancaster

Gettysburg College, Gettysburg
Haverford College, Haverford
Juniata College, Huntingdon
Lafayette College, Easton
La Salle College, Philadelphia
Lebanon Valley College, Annville
Lehigh University, Bethlehem
Lincoln University, Lincoln University
Moravian College, Bethlehem
Mount Mercy College, Pittsburgh
Pennsylvania State University, University Park
Rosemont College, Rosemont
Seton Hill College, Greensburg
State Teachers College, California
Swarthmore College, Swarthmore
Temple University, Philadelphia
Thiel College, Greenville
University of Pennsylvania, Philadelphia
University of Pittsburgh, Pittsburgh
University of Scranton, Scranton
Ursinus College, Collegeville
Villanova University, Villanova
Washington and Jefferson College, Washington
Waynesburg College, Waynesburg
Wilkes College, Wilkes-Barre
Wilson College, Chambersburg

RHODE ISLAND
Brown University, Providence
Bryant College, Providence
Pembroke College, Brown University, Providence
Providence College, Providence
University of Rhode Island, Kingston

SOUTH CAROLINA
The Citadel, Charleston
Clemson Agricultural College, Clemson
Furman University, Greenville
Presbyterian College, Clinton
South Carolina State College, Orangeburg
University of South Carolina, Columbia
Winthrop College, Rock Hill

SOUTH DAKOTA
Augustana College, Sioux Falls
Black Hills Teachers College, Spearfish
Dakota Wesleyan University, Mitchell

Freeman Junior College, Freeman
General Beadle State Teachers College, Madison
Huron College, Huron
Mount Marty College, Yankton
Northern State Teachers College, Aberdeen
Presentation Junior College, Aberdeen
Sioux Falls College, Sioux Falls
South Dakota School of Mines and Technology, Rapid City
South Dakota State College of Agriculture, Brookings
Southern State Teachers College, Springfield
State University of South Dakota, Vermillion
Wessington Springs College, Wessington Springs
Yankton College, Yankton

TENNESSEE
Southwestern at Memphis, Memphis
Union University, Jackson
University of Chattanooga, Chattanooga
University of the South, Sewanee
University of Tennessee, Knoxville
Vanderbilt University, Nashville

TEXAS
Odessa College, Odessa
Rice Institute, Houston
St. Mary's University of San Antonio, San Antonio
University of Texas, Austin
University of Houston, Houston
Lamar State College of Technology, Beaumont

VERMONT
Bennington College, Bennington
Marlboro College, Marlboro
Middlebury College for Men, Middlebury
Middlebury College for Women, Middlebury
Norwich University, Northfield
St. Michael's College, Winooski
University of Vermont, Burlington

VIRGINIA
Mary Baldwin College, Staunton
Emory and Henry College, Emory
Hollins College, Hollins College
Mary Washington College, University of Virginia, Charlottesville
Randolph-Macon Woman's College, Lynchburg
Richmond College, Richmond
Richmond Professional Institute, Richmond
Sweet Briar College, Sweet Briar

University of Virginia, Charlottesville
Virginia Military Institute, Lexington
Washington and Lee University, Lexington
William and Mary College, Williamsburg
Hampton Institute, Hampton
Marymount Junior College, Arlington
Longwood College, Farmville

WASHINGTON
College of Puget Sound, Tacoma
Seattle Pacific College, Seattle
Seattle University, Seattle
Whitman College, Walla Walla

WEST VIRGINIA
Alderson-Broaddus College, Philippi

WISCONSIN
Beloit College, Beloit
Lawrence College, Appleton
Marquette University, Milwaukee
Ripon College, Ripon

THE 1958-59 ADVANCED PLACEMENT EXAMINATIONS

Subjects: Thirteen examinations based on courses described in the Advanced Placement Program Syllabus are offered:

Literature and English Composition (one examination)	French	Mathematics
American History	German 3	Biology
European History	German 4	Chemistry
	Latin 4	Physics
	Latin 5	
	Spanish	

Examination dates: The examinations will be given during the week of May 11 to 15, 1959.

Registration: Registration for the examinations opens February 15, 1959, and closes April 6, 1959. Detailed instructions for registration are given in the 1958-59 bulletin of Information, Advanced Placement Examinations. It also contains an application blank for the student's use and explains where, when and how to take the examinations.

Copies of the Bulletin are available on request to the address given below or may be ordered with the form headed, "1958-59 Advanced Placement Examinations." Any school which expects to have one or more candidates for the 1958-59 examinations should also indicate this on the form and return it no later than November 15, 1958.

Fees: Fees for the examinations are $5 for registration, and 8 for the examination in each subject.

Inquiries and correspondence: All correspondence concerning the examinations should be addressed to: College Board Advanced Placement Examinations, Box 592, Princeton, New Jersey.

Jamaica High School

Jamaica 32, New York

1958-59

Dear Sir:

We would like to tell you something about Jamaica High School because it may help you to evaluate our transcripts of record. The history of our school goes back over sixty years, and we have a tradition of scholarship and public service. Jamaica is a large school of approximately four thousand students and a faculty of one hundred ninety. We serve, for the most part, an upper-middle-class area, and our out-of-town college applicants come almost exclusively from business and professional homes. We offer a rich and varied program including 6½ years of science, 4½ years of mathematics, and 4 years of five different languages.

Our top 120 graduates have been in an honors course where practically every student took an enriched program including 4 years of English, 4 years of science, 4 years of mathematics, 4 years of a foreign language, and 3½ years of social studies. These pupils have taken minor subjects such as music, shop, art, and health education in addition to the five major subjects each term.

There has been some question as to whether large public city schools can offer quality education. We, therefore, respectfully call to your attention the fact that during this past year Jamaica High School has won two National Merit scholarships, one General Motors scholarship, and sixty New York State Regents scholarships. We were one of two schools in the nation to win two Westinghouse Science scholarships, and one of the two schools in Queens to score a national award in the National Science Fair. Our school newspaper has been awarded Medalist rating, the highest in the nation, for the fifth consecutive year. Talent in dramatics and music is given opportunities because we present a three-act play every fall and a concert and musical every spring.

Sincerely yours,

Louis A. Schuker

Louis A. Schuker
PRINCIPAL

PART II

College-Level Course Syllabuses

COURSE DESCRIPTIONS

FOLLOWING are course descriptions and some suggestions concerning examinations in the Advanced Placement Program of the College Entrance Examinations Board (CEEB). Eleven subject areas are included —American History, European History, Literature and English Composition, French, Advanced German 3 and 4, Advanced Latin 4 and 5, Spanish, Biology, Chemistry, Physics, and Mathematics. Each subject area is presented in two sections. First in each subject area, selections of the syllabus prepared by a special independent committee and included in the College Entrance Examination Board's *Advanced Program Syllabus* (1958) are reprinted by permission of the Program Director of the Advanced Placement Program. The second section of each subject area, except German, presents adaptations of the CEEB's syllabuses as made by selected schools and used in these schools or syllabuses prepared and used by schools that have been conducting Honor Courses over a period of years. For complete information about procedures and developments in the Advanced Placement Program and for information about colleges and secondary schools participating in the Program, write to: Program Director, Advanced Placement Program, College Entrance Examination Board, 425 West 117 Street, New York 27, New York.

AMERICAN HISTORY

CEEB's Suggested Syllabus

AN advanced placement course in American History should make demands on students equivalent to those of an introductory college course. It should give students a thorough grounding in facts but should go on from these facts to an examination of their contexts, their causes and results, and their significance.

Students should learn how to read historical material analytically and critically and should be able to express themselves in good English. They should be trained to weigh historical evidence and interpretations and to arrive at conclusions on the basis of facts rather than prejudice. Sir Richard Livingstone put these ideas well when he wrote in *The Future of Education* that to the student ". . . facts and theories are . . . counters with which he learns to use his brain; . . . to argue a case and weigh evidence, to distinguish the relevant from the irrelevant, to seize the point at issue, to arrange his thoughts and marshal facts to support a theory, to discover when a statement is proved and when it is not, to reason logically and express himself clearly—in fact to play the great game of the intellect. . . ."

Course

There is no desire to standardize advanced school courses in American History; American History courses vary from college to college, and teachers in schools should feel free to show initiative and to experiment in planning their courses. It is recognized that although many schools will be able to set up special college-level courses, in some schools—particularly in small ones—advanced placement will be of a tutorial nature in addition to a regular course.

The inclusive dates of an advanced course will vary with the teacher, but most college courses cover the period from the middle of the eighteenth to the middle of the twentieth century.

A college textbook may well be the basis of an advanced course, which should be, however, considerably more than a textbook course. Students should acquire some knowledge of major documents, historians, and interpretations of American History. They should become familiar with essay-type examinations, the use and interpretation of maps, the lecture method of presenting some material, and note-taking from both printed materials and lectures. Very important, too, is training in writing research papers, which should be short, reasonably complete studies of limited subjects. Students should learn how to cite sources and to give credit for ideas and phrases. Teachers may want students to read extensively in general historical works, special studies, or biographies; some may introduce, too, intensive work in historical problems or with documents.

Certain important topics in American History, not restricted to a single historical period, are listed below. It is not expected that every topic will be covered in an advanced course. Secondary-school teachers, like their colleagues in the colleges, will differ as to which topics they consider most important and will stress them accordingly. A student should have somewhat more than a textbook knowledge of many of these topics and, in addition, should deal intensively with some of them. The examination will take variations into account by offering a sufficient choice of questions. The topics, with explanatory sub-topics by way of illustration, are:

1. America and Europe: immigration and immigration policy, transplantation of institutions and ideas, economic ties, diplomacy

2. The westward movement: significance of the various frontiers, territorial expansion, land policy, population shifts

3. Making of American nationalism: constitutionalism, economic developments, wars and diplomacy, the Supreme Court, national heroes, literature

4. Divisive ideas and interests in American history: sections, classes, states' rights, minorities

5. Development of political ideas: the European heritage, colonial contributions, the Constitution, the "conservative" *versus* the "liberal" tradition

6. The political party system: origins, contests, evolution, minor parties

7. Business enterprise in America: types and methods of organization in commerce, industry, and finance; achievements; business cycles, science and technology

8. American labor systems and organizations: indentured servitude, slavery, wage labor, contract labor, unions, legislation

9. American agriculture: shift from subsistence to commercial agriculture, agrarianism, mechanization, subsidy, legislation

10. Government and the American economy: regulation, protection, promotion

11. America's reform movements: roots, varieties, methods, achievements

12. America as a world power: nineteenth-century background, imperialism, the quest for security

13. Wars and their impact on the United States: causes, conduct, consequences

14. Leadership in America: military, political, economic, intellectual, religious, educational

Examination

The examination is three hours in length, and consists of both essay and objective questions, with more than two thirds of the time devoted

to the former. As has been indicated, a sufficient choice of questions enables students to show what they know; students also have sufficient time to produce well-organized, well-written papers.

Essay Section

The essay portion of the Advanced Placement Examination in American History consists of at least two essays of 40 to 50 minutes each. In addition, it may contain shorter essay questions. Students are offered a choice of essay questions.

ADAPTED SYLLABUSES

Newton High School, Newtonville, Massachusetts
Harold Howe II, Principal

The Advanced Placement American History course is one which is intended to make extensive and advanced demands on the student, demands which approximate those of an introductory college course. Admission to the course is based on teacher recommendations, achievement in history in the high school, high standing in other courses, IQ scores, and reading scores. The student who takes this course is expected to achieve a mastery of the facts and chronology of American History, from the middle of the eighteenth century to the middle of the twentieth century, as presented in a standard college textbook. Textbooks used in the course are: Hicks, *Short History of American Democracy;* Hicks, *The Federal Union;* Hicks, *The American Nation;* Bailey, *The American Pageant.*

The student is also expected to acquire some knowledge of major documents, historians, and interpretations of American history. He is assigned readings in: Allen, *Only Yesterday;* Billington, *Westward Expansion;* Bailey, *Diplomatic History of the American People;* Bomis, *The United States as a World Power;* Coker, *Liberty, Democracy, and Property;* Commager, *Documents of American History;* Heffner, *Documentary History of the United States;* Kelly and Harbison, *The American Constitution;* Kennan, *American Diplomacy, 1900-1950;* Schlesinger, *Age of Jackson;* Sheeham, *The Making of American History, Volumes I and II; The Turner Thesis,* Problems in American Civilization series.

Each student also reads extensively in a variety of works as he studies in at least two of the theme areas recommended by the College Entrance Examination Board's Committee on American History. Finally, the student is expected to develop an ability to deal analytically and critically with the materials studied, and a reasonable facility in the expression of ideas both in class discussion and in papers and essay questions. Most meetings of the class are devoted to class discussion; some are given over to reports; in others, the instructor lectures. Young people who take this course are expected to take the Advanced Placement Examination in American History.

EVANSTON TOWNSHIP HIGH SCHOOL, Evanston, Illinois
Lloyd S. Michael, Principal

Objectives

The course has the following objectives:

1. The acquisition of information and understanding of the major issues, events, conditions, and institutions in the history of the United States, to some extent during the colonial period, but particularly after 1763.

2. Ability to think critically about recurring issues and points of view about them in the history of the United States: to define a problem; to see relationships, cause and result, trends, and comparisons; to recognize assumptions; to follow the methods and logic of argument; to see conclusions or solutions; and to relate these issues and points of view about them to present-day issues. Recurring issues and problems selected have revolved around the strength and role of government; the nature of the Union; the development of democracy; individualism and the majority; conflicts among sections and classes; and the role of the United States in world affairs.

3. Development of interest in aspects of United States history.

4. Ability to discuss issues, policies, and conditions.

5. Ability to write clearly and effectively about topics in United States history.

6. Ability to take useful notes from what is read or spoken.

Organization

The course is organized in a roughly chronological fashion as follows: *the first unit:* the colonial period to the administration of Jefferson, with emphasis on the origins of the American political system; *the second unit:* from Jefferson's administration beyond the Jacksonian period, with emphasis on the origins of democracy; *the third unit:* on the coming of the Civil War and reconstruction; *the fourth unit:* post-Civil War to the present, with emphasis on the effects of industrialization on American society; and *the fifth unit,* United States foreign affairs. However, each of these units uses such material as is relevant from periods before and after the major time period of the unit.

Something like three weeks of time is ordinarily spent on current American problems. Reading materials come from pamphlets, magazines, and the like.

Students participate in choosing the specific and particular aspects of history or recurring issues and basic concepts to be emphasized as well as investigate one topic for writing a major paper, many of the shorter papers and reports, and almost all of the current problems. We make an effort to encourage students to develop and pursue their own interests within a framework of United States history.

The class uses a great deal of discussion, occasional lectures, reports, films, and, particularly during the second semester, independent study and conference.

The class meets daily, but, on the average, one of these periods each week is used for individual conferences with students and individual study. Occasionally, when students are investigating topics, class periods are used for conference and study for even a week or more. Students are expected to work a minimum of five hours per week outside of class.

Each student, during the course, is expected to write a variety of short papers, 500-1,000 words, summarizing a point of view, explaining a problem, analyzing an argument, comparing policies, criticizing a policy, and the like. During the fall, each student writes a paper of about 1500 words, either making relationships within a period (for example, "Religion and Reform in the Jacksonian Period") or from one period to another (for example, "A Comparison of Jeffersonian and Jacksonian Democracy"). Topics are individually chosen; special reading is required. In midwinter, each student is asked to write two short papers, one summarizing the origins of the Civil War and another explaining some aspect of its origins, or one longer paper, at least 3,000 words, supporting an interpretation of the origins of the Civil War; almost all choose the latter. During the second semester each student is asked to choose an area of American history in which to specialize, for example, "Government and the American Economy," "American Nationalism," "America as a World Power." Within this area, he is to do special reading as well as to write a paper of at least 3,000 words on some problem which is either suggested to him or which he defines for himself. Sample topics might be "The Meaning of the Free Enterprise System for Any Three Periods" (such as 1820-1865, 1865-1900, 1930-1950), "National Development and Changes in Interpretation of the Constitution for Any Three Periods" (such as 1790-1820, 1900-1920, 1930-1950), "Power Politics as a Basis for American Foreign Policy in Some Area" (such as the Far East, 1897-1945). Extensive but individual reading is required for this paper and for the topic in general.

Tests are more often essay than objective, although both kinds are used. Objective tests test not only understanding but thinking as well. Although short quizzes are used frequently during the first weeks of the course to find out about development of proper reading skills, tests thereafter are over longer units to find out about the development of relationship.

Materials

1. The text used are *A Short History of American Democracy*, by John D. Hicks and George E. Mowry, 1956 edition, published by Houghton Mifflin Company.
2. Extensive use is made also of readings in the following:

A. Craven, W. Johnson, and F. R. Dunn, *A Documentary History of the American People*, Ginn and Company, New York, 1951

R. W. Leopold and A. S. Link (ed.), *Problems in American History*, Prentice-Hall, New York, 1952

Selected titles in

Problems in American Civilization, Amherst Series, D. C. Heath Co.:

The Declaration of Independence and the Constitution
Jackson vs. Biddle
Slavery as a Cause of the Civil War
Democracy and the Gospel of Wealth
The New Deal: Revolution or Evolution!

Mimeographed materials, and H. Bragdon and S. McCutchen, *A History of a Free People*. Section on the Constitution. Macmillan Company, New York, 1954. This is used to prepare for the state-required examination on the Constitution.

3. Less extensive use is made of a variety of other fairly common readings. Each individual student reads part or all of at least six or seven of these titles:

Problems in American Civilization, The Amherst Series, D. C. Heath Co.:

Immigration
John D. Rockefeller
Bryan and the Campaign of 1896
Roosevelt, Wilson, and the Trusts
Loyalty in a Democratic State—and others

Bailey, Thos., *The American Pageant*, D. C. Heath Co., Boston, 1956

Bailey, Thos. A., *A Diplomatic History of the American People*, Appleton, Century, Crofts, New York, 1950

Beard, Charles and Mary, *The Rise of American Civilization*, Macmillan, N. Y., 1939

Curti, *The Growth of American Thought*, Harper, New York, 1943

Craven, Avery O. *The Coming of the Civil War*, Scribner's, New York, 1942

de Tocqueville, *Democracy in America*

Hofstadter, Richard, *The Age of Reform*, Knopf, New York, 1955

Hofstadter, R., *The American Political Tradition*, Vintage Books, Knopf, N. Y., 1948

Kennan, George F., *American Diplomacy*, Mentor Books, New York, 1952

Link, Arthur S., *American Epoch*, Knopf, New York, 1955

Morison and Commager, *Growth of the American Republic*, Oxford University Press, N. Y., 1950

Pressly, *Americans Interpret Their Civil War*, Princeton University Press, N. J., 1954

Schlesinger, A. M., Jr., *The Age of Jackson*, Little, Brown and Co., New York, 1945

Thorp, Curti, Baker, *American Issues: The Social Record*, Vol. 1, Lippincott, N. Y., 1955

And others

4. Individual students read individually selected readings for their own purposes in making reports, writing papers, participating on panel, and so on.

EUROPEAN HISTORY

CEEB's Suggested Syllabus

IN DRAFTING a syllabus for the advanced examination in European history, the committee had the following situation in mind. The committee felt that, however much the introductory course in European History may vary from college to college, there exists a common level of quality and approach which all would agree is the desired characteristic of such courses. Therefore, the committee has not attempted to outline a particular course for the schools but rather to define the level of approach, coverage, and kind of materials which any course proposing to qualify students for college credit should comprehend. It is recommended that the school course be taken in the student's senior year, although in some instances it may be taken in the junior year or spread over the junior and senior years. Some schools may be able to set up a special course or an advanced section of a regular course; others may find it possible only to make extra and guided work available to the most promising students.

COURSE

The level and scope of an advanced course are indicated by three aspects of European History study which the examination will cover.

First, the examination will test whether the student has an adequate knowledge of the general narrative of European History from 1450 to 1939 as set out in any mature college textbook.

Second, the student's specific and intensive knowledge of whichever one of the following five periods of European History he has selected as his period of concentration will be tested. Under each period the committee has suggested a series of topics to be covered, more as an indication of the scope and intensity of the treatment desired than as an effort at an irreducible minimum. Although one period must be choosen by each

student as his period of concentration, he will also be tested on his understanding of the relationship of this period to the general narrative of European History. As is suggested, he should be aware of and will be tested on the Middle Ages as a prologue to modern European History. The prologue and five periods, with suggested topics, are:

Prologue: The legacy of the Middle Ages

1. The developing social hierarchy: the manorial economy, the estates and their functional interrelations, capitalism in the Middle Ages, aristocracy and the rising middle class
2. The universal church: the hierarchy, orthodoxy and heresy
3. Feudal monarchy, law, and representative government
4. The medieval mind: the universities, rationalism and experimental science, art and architecture

1450-1603:

1. Renaissance in Italy and the North: individualism, secularization, the new learning, and art
2. The Protestant revolution: its theological, political, economic, and social aspects
3. Expansion in Europe and overseas
4. The price revolution
5. The emergence of the modern state

1603-1715:

1. The counter-reformation and militant Protestantism
2. Mercantilism and the continuing growth of capitalistic society: Holland, France, England
3. The constitutional struggle in England
4. The age of Louis XIV
5. The scientific revolution, cultural developments

1715-1815:

1. The Enlightenment
2. The enlightened despots and the bureaucratic state
3. Constitutional developments and the cabinet system in Great Britain
4. The balance of power in Europe and overseas
5. The *ancien régime* in France and in Europe
6. The French Revolution, Napoleon and the French imperium
7. Applied science, increasing population and agricultural production, the steam engine and the transportation revolution

1815-1870:

1. The Concert of Europe
2. Romanticism, liberalism, the conservative reaction
3. The revolutions of 1848: the impact on liberal nationalism
4. Unification movements
5. Reform movements: English and continental

6. Socialism: Utopian and Marxian
7. Evolution and mechanism in science and social science

1870-1939:

1. Competitive nationalism and imperialism, prewar diplomacy and the alliance system
2. Science and society
3. The capitalism of the large firm
4. The service state
5. World War I, the collapse of the established order, and the postwar search for security
6. Totalitarian revolutions in Russia, Italy, and Germany
7. The world-wide depression and its impact on the political, social, and economic order

Third and equally important, the examination will test the student's ability to see the facts of history in context, to distinguish causes, results, and significance; his ability to read historical materials in a discriminating way and to write intelligently and effectively; his ability to weigh evidence relating to historical events and problems and to arrive at conclusions on the basis of facts rather than prejudice.

A mature textbook may well be the basis for an advanced course in school, which should be, however, considerably more than a textbook course. In offering this syllabus it is the intent of the committee to encourage a high degree of flexibility. Some teachers may want students to read extensively in general historical works, special studies, biographies, or primary works; others may prefer to have them do intensive work in historical problems, documents, or questions of historical interpretation; still others may wish to concentrate for several weeks on special topics.

Courses should include some lecturing, the essay type of examination, the use and interpretation of maps, training in writing research papers, and guidance in note-taking.

Experience so far with the program has shown that different kinds of courses do prepare students successfully for the European History examination. Intensive concentration for much of the year in one of the periods or in one country, or courses arranged largely around materials in the history of ideas have in their different ways proved satisfactory.

Examination

The examination is three hours in length, and consists of both objective and essay questions. Objective questions . . . are designed to test the student's general understanding of European History, 1450-1939, and its medieval background, his ability to define terms, to understand cause and effect, and to establish relationships, comparisons, and contrasts.

AN ADAPTED SYLLABUS

WESTERN HIGH SCHOOL, Baltimore, Maryland
Nanette R. Blackiston, Principal

When it became apparent that girls in the accelerated course would be required to take the Advanced Placement Examinations to be accepted for advanced standing in the colleges of their choice, it seemed wise to bring the course of study for the survey course in European History into closer conformity to the Advanced Placement Program. This involved teaching the Medieval period as background and starting the actual course with the year 1450. This change made it possible to put greater emphasis on the modern period and to bring the course up to World War II rather than just through World War I as in the past. The list of topics which appears on pages 30-31 of the 1956 Bulletin of the Advanced Placement program was, therefore, used as the course of study and followed closely up to the Modern period where some slight changes in order and emphasis were made.

The following were the topics taught in History V last year:

Prologue: The legacy of the Middle Ages

1. The developing social hierarchy: the Manorial economy, the estates and their functional interrelations, capitalism in the Middle Ages, aristocracy, and the rising middle class
2. The universal church: the hierarchy, orthodoxy, and heresy
3. The feudal monarchy and representative government (Special emphasis was put upon developments in England.)
4. The rule of law: ideal and reality. Here again emphasis was put upon the development of English common law and the jury system
5. The medieval mind: the universities, rationalism, and experimental science

1450-1603:

1. Renaissance in Italy and the North: individualism, secularization, and the new learning
2. The Protestant revolution: its theological, political, economic, and social aspects
3. Expansion in Europe and overseas
4. The price revolution
5. The scientific revolution

1715-1815:

1. The enlightenment
2. The enlightened despots and the bureaucratic state
3. Constitutional developments and the cabinet system in Great Britain
4. The balance of power in Europe and overseas
5. The "ancient regime" in France and in Europe
6. The French Revolution

7. Napoleon and the French imperium
8. Applied science, increasing population and agricultural production, the steam engine and the transportation revolution

1815-1870:

1. The Concert of Europe
2. Romanticism, liberalism, and the conservative reaction
3. The revolutions of 1848: the failure of liberal nationalism
4. Unification movements
5. Disunifying effects of nationalism in the Austrian empire and in Turkey
6. Reform in England
7. Socialism: Utopian and Marxian
8. Evolution and mechanism in science and social science

1870-1939:

1. The third French Republic: decisive factors
2. The German Reich—the service state
3. England: the Irish question and developments in the Empire
4. The social impact of Darwinism
5. The capitalism of the large firm
6. Relations between states; competitive nationalism and imperialism, prewar diplomacy and the alliance system
7. World War I: American involvement
8. Versailles: the treaties with emphasis on collapse of established order in Eastern and Central Europe and on features later used by Hitler to arouse German discontent
9. The Weimar Republic
10. The League and search for security outside League
11. The world-wide depression and its impact on the political, social, and economic order
12. Totalitarian revolutions in Russia, Italy, and Germany

This course is presented generally by the traditional lecture method. Approximately a week at the beginning of the year is devoted to a discussion of the techniques of note taking from lectures and from reading.

At the beginning of the year, time is also devoted to discussing the existence of varying interpretations of historical events, and to considering the reliability of historical evidence and methods of establishing historical fact.

Pupils are held responsible for the material in their textbook, *History of Western Europe* by J. H. Robinson and J. T. Shotwell (Ginn and Company, New York, 1946—2 volumes). Their attention is also directed to *The Making of Modern Europe*, edited by Herman Ausubel, for varying interpretations of certain periods of European history. In addition, they are required to read a minimum of fifty pages a week from other sources. Suggestive reading lists are posted and pupils are encouraged to read primary sources wherever possible. The average pupil reads

generally between one and two hundred pages weekly: the superior student, between two and five hundred pages.

Various methods of reporting on the supplementary reading are used. For the work on the Medieval period, a pupil or groups of pupils are assigned one topic and all reading for the first month or five weeks is done on this topic. The results of the reading are then pooled and presented as an oral report by a spokesman chosen by the group and supplemented and clarified, if necessary, by the teacher. Bibliography and note cards are required from each pupil. This assignment provides practice in note-taking and in synthesizing material from various sources. For the remainder of the first term the reading is to be done on the area covered by the lectures of the week. A brief written report, summarizing the material and indicating insights gained, is required each Monday. From the beginning of the second term, all reading is done on a carefully chosen subject in one period. The results of the reading are presented in a formal term paper. Since the English department has already taught the techniques of writing a term paper, the only assistance needed from the history teacher is in narrowing and clarifying the topics to be chosen and in dealing with the historical material as problems arise.

Three-hour examinations composed of objective questions and essay questions are given at the end of each term.

The Western High School recommends for advanced placement in history only those girls who receive a mark of eighty or better. Pupils so recommended have achieved satisfactory results in College Placement Examinations, in second-year college courses, and in Advanced Placement Examinations.

BIOLOGY

CEEB's Suggested Syllabus

AN ADVANCED course in biology may be either a single intensive course or a second course presupposing an earlier beginning course. In any case, it should provide a more mature presentation of content and more extensive laboratory experience than is usual in a secondary school course. It should have three class meetings and three hours of laboratory work a week for 30 weeks. The laboratory requirement may be fulfilled entirely during the advanced course or may be partially completed during a beginning course.

Since a thorough presentation of concepts in biology involves chemistry, students taking an advanced course in biology should first complete, if possible, a course in chemistry.

The following important considerations should shape the presentation of an advanced course in biology. The fact that fundamental principles

apply to both plants and animals should be emphasized. The over-all approach should be dynamic, making constant reference to functional morphology. Evolution should be a fundamental theme or framework of the course, and the interdependence of organism and environment should receive constant attention with stress on animal adaptations and behavior. Living materials, and field work if feasible, should be an integral part of the laboratory work.

The advanced course should develop an understanding of underlying principles of biology of which the following are illustrative:

Living and nonliving systems differ from one another in a number of ways, such as reproduction, irritability, metabolism, biological specificity, *etc.*, although both are made up of the same materials and are subject to the same physical and chemical laws.

In living things various levels of organizations can be recognized; for example, cells, tissues, organs, organisms, species, societies, *etc.* Each level depends in varying degree on all others and at each level there is an intimate relationship between form and function.

Evolutionary changes, adaptive and nonadaptive, are characteristic of living things: they are brought about by the interaction of random mutations occurring within and selection pressures operating upon a population.

A continuing supply of energy is essential for life. Certain organisms possess the ability to utilize the energy sources of the physical world to build energy-rich carbon compounds; all other organisms obtain their energy by utilization of these compounds.

The above principles are presented here only as examples and the list is certainly not to be construed as exhaustive.

Course

This syllabus describes a typical introductory biology course as currently taught in many colleges and universities. It will serve as a guide to secondary school teachers, who should feel free, however, to substitute materials of their own selection to achieve the aims of the course. The manner and order in which topics are to be presented are and must be at the discretion of the individual teacher. Laboratory material should be selected to illustrate each major group listed below.

1. Orientation (1 week): the relationship of biology to the other fields of human endeavor, the "why" of the study, the method of the study, *etc.*
2. Cells and protoplasm (2-3 weeks)
   a. Living versus nonliving: theories of the origin of life
   b. Chemical aspects of protoplasm
      (1) Elements: properties and distribution
         (a) Carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulphur

(b) Relative abundance and availability of chemicals necessary for life
(c) Ions, valence, pH
(2) Carbohydrates: simple to complex
(3) Fats, fatty acids, and glycerol
(4) Proteins and amino acids
(5) Nucleic acids
(6) Enzymes: structure, origin, types, and theories of action

c. Physical aspects of protoplasm
(1) Colloids, sol-gel reversibility, *etc.*
(2) Surface phenomena: electrical charge, surface tension, surface-volume ratio
(3) Suspensions, emulsions, and true solutions in protoplasm

d. The cell membrane
(1) Nature of membrane: porosity, fatty constituents, electrical charges
(2) Passage of materials through membranes: diffusion, osmosis, differential permeability, dialysis

e. The cell wall
(1) Chemical constituents: lignin, suberin, cellulose
(2) Structure: freely permeable, nonliving

f. Cytoplasm
(1) Mitochondria and oxidative enzymes
(2) Plastids, chloroplasts, pigments
(3) Vacuoles
(4) Centrioles

g. Nucleus
(1) Chromatin
(2) Nucleoli

3. Structure, function, and classification of lower plants (3-5 weeks)
a. Thallophytes
(1) Fungi
(a) Nitrogen and carbon cycles
(b) Modes of nutrition
(c) Disease, immunity, and antibiotics (Viruses should be discussed briefly)
(2) Algae: evolution of structure and reproduction in blue-green and green algae

b. Bryophytes
(1) Life cycle (moss or liverwort)

4. Structure, function, and classification of higher plants (3-6 weeks)
a. Life cycle of fern
(1) Gametophyte and sporophyte generations
(2) Homospory

b. Life cycle of an intermediate heterosporic form, as Selaginella or Pine
c. Life cycles of flowering plants
   (1) Gametophyte and sporophyte generations
   (2) Flowers, seeds, and fruits
   (3) Germination of seeds
d. Root, stem, and leaf: photosynthesis, translocation, transpiration, digestion and assimilation, storage, growth movement and hormones, soils, mineral nutrients, vegetative reproduction
e. Economic importance and evolutionary significance of plants

5. Structure, function, and classification of invertebrates (4-6 weeks)
The phyla to be studied are selected on the basis of phylogenetic significance. Those given attention are Protozoa, Coelenterata, Platyhelminthes, Annelida, and Arthropoda. These phyla are used to illustrate various levels of organization. Each is to be studied by one or more examples. Mollusca, Echinodermata, Nematoda, and Porifera may well be studied though perhaps in lesser detail. Some attention should be given to the economic significance of the various forms.
   a. Protozoa: to be studied as simple organisms solving fundamental problems of existence. Free-living and parasitic forms should be considered.
   b. Coelenterata: tissue grade of organization, cell specialization; regeneration; alternation of generations, polymorphism
   c. Platyhelminthes: bilateral symmetry, cephalization; organ systems; mesodermal derivatives; free-living vs. parasitic forms
   d. Annelida: general body plan, coelom, segmentation
   e. Arthropoda: serial homology, exoskeleton, adaptive radiation, examples of recapitulation, life cycles and development, social organization, economic importance
6. Vertebrate structure and function (7-10 weeks)
Laboratory study of structure and function of organ systems of some vertebrate type such as the frog—the student is expected to acquire some familiarity with vertebrate classes as well as the primitive Chordates. Material from other classes may be used to increase the student's understanding of man.
   a. Digestive system: foods, digestion, absorption, assimilation
   b. Respiratory system: breathing, exchanges in lungs and tissues; cellular respiration
   c. Circulatory system: nature and functions of blood and lymph, structure and evolution of heart and blood vessels
   d. Excretory system: sweat glands, lungs, liver, and kidneys in maintenance of constancy of internal environment
   e. Reproductive system: structure, evolutionary development, and hormonal control, significance of extra-embryonic membranes in terrestrial adaptation

f. Skeletal and muscular systems: basic structural plan of skeleton and some of the modifications found in Vertebrates, relation of muscles to skeletal movements
g. Integrative systems
   (1) Nervous systems (central, peripheral, and autonomic): important special sense organs, reflex arc, conditioned reflexes
   (2) Endocrine system

7. Development and growth (1-3 weeks): mitosis, meiosis, fertilization
Emphasis should be on the significance of these processes rather than on a detailed chronology of events. The germ layer origins of some major organ systems such as the nervous system should be considered.

8. Genetics (2-3 weeks)
Plant, animal, and human examples should be considered.
   a. Mendel's work
   b. Developments since 1900
      (1) Chromosomes, genes, and alleles
      (2) Modified genetic ratios: multiple alleles; multiple factors; linkage, including sex linkage; crossing-over; lethals
      (3) Sex determination
      (4) Mutations (genic and chromosomal)
      (5) Mechanism of gene action, gene-enzyme relationship

Note: the teacher may wish to weave the material of the following three topics—9, 10, 11—into the preceding sections, or may prefer to treat them as separate topics.

9. Evolution (2-3 weeks): mechanisms, theories
It is assumed that evidence relative to evolution has been presented throughout the course. This section is to summarize the information thought desirable.
   a. The meaning of evolution: change and persistence
   b. Evidences of evolution from morphology, embryology, physiology, paleontology, and geographical distribution
   c. Theories of evolution
      (1) Older theories: Lamarck and Darwin
      (2) Modern ideas: isolation, population size, genetic drift, mutation, variation, selection

10. Ecology, including conservation (1-2 weeks)
It is assumed that the relationship between the organism and its environment has received constant attention throughout the course.
   a. Physical factors
   b. Biotic factors
      (1) Cycles of the elements
      (2) Food chains: energy relationships
      (3) Parasitism, symbiosis, commensalism, predation

(4) Social relationships
(5) Succession

c. Balance of nature and conservation

11. Diseases and immunity (1-2 weeks)
    a. The evidence already covered concerning the parasitic role of viruses, bacteria, molds, protozoa, worms, and arthropods may be briefly reviewed
    b. The deficiency diseases should be briefly summarized
    c. Body defenses: skin, phagocytosis, antibodies

A good *college* textbook should be used in an advanced course. Some schools may want to use both a college text in zoology and one in botany. Teachers are urged to secure guidance in selecting texts by writing to the biology departments of the colleges and universities which their students are likely to attend.

Examination

The three-hour examination is designed to give students an adequate opportunity to demonstrate their knowledge and understanding of biology. It consists of both objective and essay sections, with the latter requiring about two thirds of the time and offering some choice of questions.

ADAPTED SYLLABUSES

Weequahic High School, Newark, New Jersey
Julius C. Bernstein, Principal

The Advanced Biology course was conducted as a special advanced section given to a group of 28 carefully screened students who were chosen from a much larger group who applied for admission to the course. The text in use is the 1957 edition of Marsland's *Principles of Modern Biology*. The course has been conducted with five class lecture-discussion periods during school hours each week plus one after-school session; each period is 40 minutes in duration. In addition there was a special laboratory period of 40 minutes per week plus one three hour laboratory session at the pathology laboratories of a nearby community hospital.

All of the students in the class are sophomores and none of them has had any formal training in chemistry. Each one is aware of the fact that there is not much likelihood that members of this group will attain advanced standing in college because there will have been a two-year gap between their completion of this course and going to college. Each student is taking this examination in order to test his own growth on the basis of an impartial examination and in order to gain the experience involved. The course will not yet have been completed at the time that the advanced placement examination is given; there still will remain more than five weeks of work.

Basically the course is the one outlined in the syllabus developed by the Advanced Placement Program. It consisted of an introductory orientation. Thereafter, the class proceeded to discuss and study the following:

1. Introduction to chemistry of living things with stress on types of organic compounds, enzymes and enzyme systems, oxidation, the Krebs cycle, the role of energy rich phosphates (as A.T.P.), polymerization, hydrolysis

2. The cell, its structures and physical processes involved in cell activity, such as diffusion, osmosis, solation and gelation, active transport, relationships of area to volume, *etc.*

3. Types of plant metabolism, including independent photosynthesis, saprophytism, and chemotrophic nutrition

4. Classification, structures, and nutritional functions of the plant world. The classification is not the old type four phylum grouping, but includes 14 phyla of Thallophytic plants, the Bryophytes, and the Tracheophytes.

5. Basic problems of animal metabolism and nutrition

6. Classification of animals and description of basic animal variations.

7. Nutritional activities of animals, including ingestion, digestion, egestion, circulation, respiration, and secretion of outstanding animal systems (protozoan, coelenterate, annelid, arthropod, chordate). In this connection, special stress was given to the human digestive, respiratory, excretory, and circulatory systems. A special discussion also took place with respect to human nutritional problems.

8. The endocrine glands.

9. Problems of reproduction, asexual, sexual, and alternation of generations with stress on reproduction of flowering plants and higher animals, including oviparous and viviparous types. Some elementary introductions into plant and animal embryology is introduced here.

10. Genetics. Mendelian history, the gene theory, metosis, meiosis, DNA and nucleoproteins, dominance, blending, linkage, crossing over, selective breeding, inbreeding, the concept of alleles, numerical ratios, genetic reassortment, mutation and aberration are some of the basic concepts developed; applications of genetics were also discussed.

11. Evolution. The history of the concept of organic evolution, Lamarckian, Darwinian, and current are included plus constant references to the evolutionary development of structures and their relationships throughout the course. The actual evolutionary steps are summarily dealt with since time is lacking.

12. Behavior. Tropisms, turgor movements, reflective, instinctive and intelligent behavior are included. Nerve cells, movement of nerve impulses, the structure of nervous systems with stress on man, the operation and structures of the receptor and effector apparatus of animals are included.

The laboratory work which included the dissection of an earthworm, frog, and rat was kept parallel with class work and discussion. Some of the work consisted of microscope studies of protozoa, algae, plant tissues and organs, plant pigments, the insect, the human skeleton, and others. These have been, of course, supplemented by films, demonstration specimens, models, charts, projection slides which are all part of regular classroom procedures.

In addition, each member of the class has been required to read six books from the prepared list and to present a report of them in written form. Each student has been required to undertake one personal research project in some special field like blood typing; gibberellic acid effects on plant growth; chlorella as a source of protein; growth and culture of hydra; the vitamins; carnivorous plants; sickle cell anemia and others of similar character.

The major handicaps that these pupils will encounter in taking this examination are: (1) a lack of experience, (2) their youth and relative lack of certain broadening courses, (3) insufficient time to complete the course at the time of taking the examination, (4) no previous knowledge of chemistry.

The course grade is given as two marks since we give two semester marks per academic year. The second of the two is an estimate because we have not yet completed our second term of work.

GARDEN CITY SENIOR HIGH SCHOOL, Garden City, New York
Winfield S. Thompson, Principal

A SUMMARY OF THE COURSE

Biology II is an elective course in animal biology and is limited to sixteen seniors, who have taken Biology I and Chemistry I and have a grade of B or better in each. It appeals chiefly to those students interested in science and in learning more biology laboratory techniques as a background for nursing school or college.

It is essentially a four-period per week laboratory and one-period per week lecture course dealing with microscope slide preparation and study, dissection technique and anatomy, experiments in animal physiology (including blood typing and counts), bacteriology, and genetics. Throughout, the concept of gradual development from simple to complex organisms is developed, with emphasis on the nervous system and increasing complexity of brain in higher forms.

This course was started in 1946. It may vary somewhat in content from year to year according to the abilities of the students, and some years we do much more with the genetics unit than others. The emphasis is on individual laboratory work; *i.e.*, each student has his own doubly injected

feotal pig for dissection. The course endeavors to teach the student to work independently. We are participating in the Ford Foundation Study of Admission to Advanced Standing in Colleges. Field trips to hospital laboratories are included.

Outline of the Course

I. *Protoplasm, the basis of life*
   A. Physical and chemical properties: discussion of colloids, chemistry of organic compounds, properties of H_2O
   B. Life functions of protoplasm: metabolism, *etc.*
   C. Cell as unit of structure and function; organization into tissues, organs, and systems; semi-permeable cell membrane
   D. Laboratory
      1. Review parts of microscope and use. Preparation of microscope slides using different stains (onion and human epithelium, spirogyra, blood smears)
      2. Study of prepared tissue slides (muscle, nerve, connective, epithelium, blood)
      3. Osmosis experiments: blood cells in isotonic, hypertonic, and hypotonic solutions

II. *Survey of key groups in animal kingdom from evolutionary point of view*
   A. Protozoa
      1. Laboratory study of living Ameba, Paramecium, Vorticella, Euglena, and Volvox and life functions of each
      2. Protozoan diseases: malaria, amebic dysentary, African sleeping sickness (Assigned to students for class reports)
   B. Coelenterates
      1. Laboratory
         a. Study of living Hydra and feeding with Daphnia
         b. Prepared slides of Obelia, illustrating division of labor and alternation of generations
      2. Portuguese Man of War: Specialization
      3. Coral and economic importance
   C. Flatworms or Platyhelminthes
      1. Laboratory: Planaria, an example of a free-living type; life functions.
         Feeding and regeneration experiments
      2. Parasitic flatworms: emphasis on loss of system, an adaptation to parasitic life; also means of preventing infection (Assigned to students for class reports)
         Tapeworm and Liver Fluka
   D. Round worms or Nematodes (Assigned to students for class reports)
      Ascaris, Trichina, Hookworm

E. Segmented worms or Annelids
   1. Laboratory: Earthworm dissection emphasizing advance in development of digestive, circulatory, and nervous systems (beginning of cephalization)
   2. Leach: adaptations for parasitic life; early medicinal uses

F. Arthropods
   1. Characteristics of phylum, indicating relationship to Annelids
   2. Laboratory
      a. Crayfish: living and injected specimens. Emphasis on increased development of nervous system through observation of reactions to various stimuli, study of organs of special sense, and dissection of nervous system (also digestive and circulatory)
      b. Grasshopper: dissection optional
   3. Economic importance of Arthropods: value of some Crustacea as food; destruction of crops, *etc.*, by insects; insect vectors of diseases; necessity for man's control of Arthropods and modern methods of control

G. Chordates: outstanding characteristics; special reference to man as a member of this phylum
   1. Prochordates: Amphioxus laboratory of microscope slide study, emphasizing appearance of dorsal nerve cord, notochord, and gill slits
   2. Vertebrates: Laboratory dissection of foetal pig (Frog precedes this if class decides to repeat the Biology I work) Each student dissects on his own specimen the following systems:
      a. Digestive
      b. Circulatory—Pigs are doubly injected for arterial and venous study. The heart is also studied
      c. Respiratory
      d. Excretory
      e. Reproductive
      f. Skeletal (Pig is not used here—Skeleton of man and other mammal skulls and vertebrae are studied as protection for nervous system and attachment for muscles)
      g. Nervous: brain, eye, spinal cord

      This laboratory work alternates with the following topic. After studying anatomy of digestive system, pigs go back into formaldehyde, we take up III. A. Anatomy of circulation follows, then physiology of that system, III. B.

III. *Vertebrate Physiology*

A. Digestion: enzymes secreted in the digestive system and their chemical action. Experiments with ptyalin, pepsin, and pancratin are done. (Food tests for starch, sugar, and proteins may be done if students feel this Biology work should be repeated)

B. Circulation: Laboratory work on blood
   1. Preparation of individual blood slides, staining with Wright's stain, and identification of different types of blood cells (Use of oil immersion lens.)
   2. Hemoglobin determination with Tallquist scale. Anemia. (Report)
   3. Blood coagulation time. Discussion of theory of blood clotting
   4. Blood counts; red cells, white count optional
   5. Blood groups. Known (sera) obtained from laboratory. Discussion of matching types in transfusion of whole blood *versus* plasma transfusions without typing. Discussion of Rh factor (Generally a student report)

C. Muscle–nerve preparation: Laboratory demonstrating frog's gastrocnemius muscle contraction in response to various stimuli applied to sciatic nerve

D. Endocrine glands and the hormones as chemical regulators of behavior. (Student reports)

IV. *Reproduction*

A. Review of cell reproduction by mitosis. Laboratory study of prepared slides of mitosis in onion root tip and white fish blastula

B. Review of maturation of gametes, fertilization, cleavage

C. Embryo development. Laboratory on incubation of fertile chick eggs and opening at various stages, or observation through a plastic cover slip that has been sealed around shell opening with paraffin

D. Film on mammal development (Pig)

V. *Heredity*

During this unit, laboratory consists of genetics experiments with Fruit Flies to illustrate Mendelian ratios: first and second generation offspring where parents differ as to eye color, body color, or wing size. These are often individual projects and are not done by everyone as a rule. Reports on projects, results, *etc.*

A. Review of Mendel's early work and laws of dominance, segregation, and independent assortment.

B. Morgan's work–Gene theory

C. DeVries' work–Mutation theory

D. Muller's work–X-rays and mutations

E. Improvement in cultivated plants and live stock through hybridization and selective breeding

F. Modern theory of evolution, combining Darwin's and Mutation Theory

VI. *Bacteriology*

A. Chief types of bacteria *versus* viruses and rickettsia. Laboratory on preparing and staining bacteria slides.

B. Beneficial bacteria and importance in balance of nature. Nitrogen cycle
C. Important bacterial diseases: symptoms, means of spread, prevention
D. Review of man's means of combatting pathogenic bacteris; body's protection, types of immunity, *etc.*
E. Antibiotics and recent research (Student reports)
   1. Laboratory on study of mold
   2. Reports on: penicilliin, streptomycin, chloromycetin, aureomycin, terramycin
F. Laboratory: preparation of agar plates and incubation of plates exposed to desks, hands, drinking fountains, silver, and dishes in cafeteria, *etc.* These are often individual projects, and reports are given to class later

Student Reports—One each semester
Laboratory Directions

1. Each student receives mimeographed laboratory directions, written for the course.
2. *Drosophila Guide,* published by Carnegie Institute, Washington, D. C.

Textbook: Strausbaugh and Weimer, *General Biology*
Current Periodical References

1. *Science News Letter*
2. *Scientific American*
3. *To-day's Health*
4. *Natural History*

Reference Texts

1. MacDougall and Hegner, *Biology, the Science of Life.*
2. Neal and Rand, *Chordate Anatomy.*
3. Sinnott and Dunn, *Principles of Genetics.*
4. Gallagher, *Essentials of Practical Microtechnique.*
5. Buschbaum, *Animals Without Backbones.*
6. Carlson, *Machinery of the Body.*

CHEMISTRY

CEEB's Suggested Syllabus

THE advanced chemistry course should be planned to meet the objectives of a general chemistry course on the college level. The following statements are representative of the college view of the objectives of instruction in such a course:

1. Beginning general chemistry (in college) is conceived as an introduction to chemistry. It concerns itself with the fundamental assumptions and the *logical structure* of chemistry.

2. The students should attain such a competence in *dealing with simple chemical problems* that they will feel a *justifiable self-confidence* within these fields.

The emphasis is on chemistry as an intellectual subject and on the rigorous training in fundamentals needed in preparation for future work in it or in related fields.

Course

The advanced work in chemistry should not displace any other part of the basic curriculum for any student. For example, it is highly desirable that a student take regular secondary-school physics and continued work in algebra. The physics could well be taken before the advanced level chemistry. If the latter is planned for one and one-half years, physics could be taken concurrently at the start. Some secondary schools have successfully given the advanced level chemistry as the first course, allowing ten to twelve periods of chemistry per week. More schools probably prefer to present the regular high-school chemistry first, followed by advanced-level work. In the latter case, a total of at least one and one-half years would be necessary. The work herein described is work beyond the regular underlying school course; the extra work represents college-level study and is *not* part of the requirement for *admission* to college in the normal way.

Differences between college and secondary-school courses now exist with respect to the kind of textbook used, the amount of laboratory work done by the student, the amount of time spent by the student on his course, and the emphasis on mathematical formulation of principles and solutions of arithmetical problems.

There are both qualitative and quantitative differences. Qualitative differences appear in the level of textbook and of laboratory work. College textbooks assume a more mature handling of principles and theories than do high-school texts. The college laboratory work assumes fewer "exercises" and more experimental problems. It also assumes a better mastery of theory. Quantitative differences appear in the number of topics treated in the textbook, and in the variety of experiments in the laboratory. They appear in the time spent by the student in individual study as well as in the amount of time spent by the student in class and laboratory.

In college, the typical students spends three 50-minute periods in class and from three to four hours in individual laboratory work during each week of the academic year (exclusive of examination periods). The presumption is that the student also spends six hours in individual, unsupervised study in preparation of assignments, some of which require written work. The secondary schools should expect the student to spend

an equivalent amount of time in order to qualify for a year of advanced standing. Secondary schools may choose to increase the time spent within a year or, alternatively, to spread the work over one and one-half years.

The level of work expected may best be described in terms of the textbooks now used in colleges. These indicate the level of achievement but not necessarily the quality of work required. The colleges do not now cover in detail all the material in the larger textbooks. A modern college chemistry text, stressing principles and concepts with enough descriptive chemistry for illustrative purposes, should be selected. Teachers and administrators who are considering texts are encouraged to visit and correspond with the Advanced Placement Program's chemistry committee members, neighboring colleges, and also schools where the advanced level chemistry course has been successfully introduced.

Colleges exercise freedom in selecting ways and means for reaching their objectives. Chemistry is broad enough and rich enough in detail to permit many alternatives in its teaching. A syllabus will not measure the quality of the secondary-school advanced course. The level of treatment is more important than the kind of illustrative material used. There is no desire to impose greater uniformity on the secondary schools than now exists in the colleges.

Following are topics to be studied for earning advanced credit in chemistry. These are supplementary in many instances to the material covered in the usual secondary-school course in chemistry. It is not expected that any one advanced-level course could cover all these items in detail. The list is not to be considered as a syllabus but rather as a guide to the level of treatment expected. (The subdivisions of these topics are not included in the listings.)

1. Chemical calculations (10 subdivisions)
2. Structure of matter (8 subdivisions)
3. States of matter (3 subdivisions)
4. Oxidation-reduction (2 subdivisions)
5. Electrochemistry (1 subdivision)
6. Acid-base relationships (3 subdivisions)
7. Equilibrium (3 subdivisions)
8. Kinetics (3 subdivisions)
9. Descriptive chemistry (4 subdivisions)

There should be a minimum of 70 hours devoted to individual observations of chemical substances and reactions, to the recording and interpretation of data, and to the calculation of the individually obtained quantitative data. Time devoted to class and laboratory demonstraions or reactions described in the text should not be counted in the 70 hours. Some semi-quantitative experiments, done to a precision of approximately one per cent, must be individually performed. These will require use of triple-beam balances sensitive to one centigram, or preferably, pulp or

analytical balances sensitive to at laest one milligram. It is desirable that the following areas be represented by experiments:

1. Determination of formula of a compound, for example, that of cuprous sulfide or a hydrate, *etc.*

2. Determination of molar weight by gas density or freezing point depression, *etc.*

3. Determination of equivalent weight by hydrogen displacement, combination with oxygen, or acid-base titration, *etc.*

The student should have some experience in glass working, weighing, filtration, titration, collection and handling of gases, and possibly in design of apparatus for some experiments.

Reactions should be performed which illustrate the important descriptive chemistry of oxygen, hydrogen, water, and solutions, halogens, sulfur compounds, nitrogen compounds, phosphates, the common cations (including a representative or two of transition elements, such as copper, chromium, manganese, *etc.*). The student should have an understanding of the experimental meaning of amphoterism, weak electrolyte, complex ion, oxidation-reduction, shifting of equilibrium, solution of a precipitate.

Some of the laboratory work devoted to descriptive chemistry ought to involve analysis of unknown mixtures partially by individually devised schemes and partially by systematic qualitative analysis. The former is more important than the latter.

Throughout the work, emphasis should be on accurate, truthful, and complete observations of experimental results (for example, in electrolysis of water the volume of hydrogen as collected is not exactly twice the volume of oxygen). It would be best in the reactions used for descriptive purposes to do others than those described in detail in the text (for example, dissolve lead in nitric acid instead of copper if the text describes the reaction of the latter metal).

If the objectives of a college-level general chemistry course are to be achieved, the teaching probably must be done by a teacher who has completed an undergraduate major program in chemistry including a year's work in physical chemistry. Only teachers with such training are able to provide adequate breadth and depth in the course and to develop the students' ability to think and reason with the fundamental facts of the science. Such quality in the course rather than mere quantity of coverage is what college teachers want in high-school courses for which college credit is granted. Probably the best single way for the secondary-school teacher to understand the level of achievement desired in such courses is by mutual discussion between him and a college teacher of general chemistry.

Examination

The Advanced Placement Examination in Chemistry is divided into two parts. The first part is an hour in length and consists of an objective test with broad coverage. Teachers should not try to prepare students to

answer every question on a test of this kind. In order to be broad enough in scope to give every student who has covered an adequate amount of material an opportunity to make a good showing, the test must be so comprehensive that no student would be expected to make a perfect or near-perfect score. Thought-provoking problems and questions, based on the most fundamental topics of beginning chemistry, are included.

The second part of the examination consists of a number of more difficult problems to solve, essay topics to discuss, and chemical equations to complete and balance. The student is allowed to choose from among the questions of each type included in the examination. The essays give him an opportunity to demonstrate his ability to think clearly and to present his ideas in a logical, convincing, and coherent fashion. This is an ability which the student must have in order to take his place successfully in advanced undergraduate college courses.

ADAPTED SYLLABUSES

WESTERN HIGH SCHOOL, Baltimore, Maryland
Nanette R. Blackiston, Principal

This course at Western High School is designed for students who are especially interested in science and who plan to continue with chemistry in college. It is an elective course but only qualified students are permitted to take it. There are five class periods per week and an afternoon laboratory period (2-2½ hours).

The difference between this course and the regular chemistry course is partly in material covered, but even more in method of approach. Responsibility for learning descriptive work is placed on the individual student; little class time is used for recitation or drill. The basic principles of chemistry are emphasized and considerable time is spent on the history of chemistry. Chemical calculations are an important part of the work. Every effort is made to stimulate scientific curiosity and interest.

Since the class has increased time allotment the required units in high-school chemistry are completed before the end of the year. This leaves time for some work on organic compounds, colloids, and the beginning of qualitative analysis. In the laboratory, they work individually and, during the last quarter of the year, each student moves ahead at her own speed. At that time they learn the use of the chemical balance and do some quantitative experiments, such as equivalent weight.

The course is not in any way intended to take the place of a first-year college course. Although two students from this class did pass the Advanced Standing Examination last year, they were strongly advised not to skip the first course in college chemistry. This course does give a good foundation for further work and it awakens great interest among good students who enjoy working on a mature level.

Prerequisites: sophomore biology, junior physics, three years of high-school mathematics

Hours per Week in the Subject: Four hours of lecture, demonstration, and recitation; one three- to four-hour laboratory period

Textbook: John A. Timm—*General Chemistry.* Next year this textbook will be used as a secondary text. The main textbook is to be Linus Pauling's *College Chemistry* (latest edition)

Additional References:

Hildebrand: *Principles of Chemistry*
Lanford: *Using Chemistry*
Latimer and Hildebrand: *Reference Book in Inorganic Chemistry*
McCue, J. J. G.: *The World of Atoms*
Sisler, Vanderwerf, and Davidson: *College Chemistry*
Smith: *Atomic Energy*
Sneed, Maynard, and Brasted: *General College Chemistry*

These are samples of the type of reference material available either in the chemistry lecture room or in the school library. Many additional readings are available in specific fields of chemistry.

General Remarks:

Since the student has had no previous work in chemistry, an effort is made to present the fundamentals as usually taught in high school and, in addition, to cover the material of first-year college chemistry. The course has two main aspects—descriptive chemistry and theoretical chemistry. Fundamental principles, theories, and calculations of chemistry are emphasized. The work is presented in a way fitted to the maturity and capacities of the students. The responsibility for learning is placed on the student; therefore, checking and drill are minimal. The zest for learning and the natural scientific curiosity that pupils of this calibre already possess are stimulated by suggested additional readings and independent laboratory investigation.

In general the topics listed in the booklet on the Advanced Placement Program by the College Entrance Examination Board are covered. *Specifically* the topics covered in class with correlating laboratory work include the following:

1. Historical background of chemistry
2. The scientific method as applied to chemistry
3. Study of the common elements and "common" compounds in the world about us—air, earth, *etc.*
4. Correlation of the structure of the elements with their physical and chemical properties and with the position of the element in the periodic table. (This includes the similarity of the elements in the families of the periodic table.)
5. Constant emphasis on the types of chemical bonds
6. Various types of equilibria—both physical (a gas with its vapor, solid with liquid, *etc.*) and chemical (solubility product application, ionization constants)
7. Salts, hydrolysis reactions; Lowry-Bronsted acid-base theory, protolysis reactions

8. Oxidation-reduction reactions (prediction of reactions and products of reaction from E° values, oxidation potential)
9. Determination of equivalent weights (and, therefore, the use of the analytical balance
10. Titration
11. Elementary qualitative analysis
12. Introduction to nuclear chemistry—subatomic particles, radioactivity, fission, fusion

It is easily seen what a tremendous opportunity the ambitious student of high intellectual ability has in this course to express his potential. Often he is given advanced standing in chemistry; often he goes on in science to bring honor to himself and to the high school in his chosen field.

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Chemistry Final Examination—Midyear

First Part

I. Some of the following statements are true, some false. Indicate those which are true, those which are false. *Correct all false statements.*
   1. Because hydrogen atoms have a natural affinity for each other, hydrogen forms diatomic molecules in the free state.
   2. The atoms of a given element are alike in every respect.
   3. Atoms differ in their electronegativity; that is, in the total number of electrons in their outer quantum level.
   4. The vapor pressure of water increases with the temperature and becomes equal to 760 mm. at the boiling point.
   5. Since about one half the weight of the materials that make up the earth's crust, its water, and its atmosphere is oxygen; this element is used as a standard of comparison for density, specific gravity, atomic weights, *etc.*

II. On your paper write the numbers 1 to 10 representing the numbers in column A. Next to each number write the corresponding number, or numbers, in column B which matches the word in column A.

A	B
1. mole	1. CaO
2. inert gas	2. LiH
3. metallic oxide	3. 296°K
4. 25°C	4. 6.023×10^{23}
5. Avogadro's number	5. molecular weight
6. hydrate	6. 212°F
7. compound	7. SO_3
8. hydride	8. $CuSO_4 \cdot 5H_2O$
9. 100°C	9. helium
10. non-metallic oxide	10. 2.639×10^{-23}
	11. 373°A
	12. CO_2
	13. radon
	14. gram molecular weight
	15. boron

III. Name and state the law or theory involved in each of the following:
1. The ratio of the densities of two gases under the same conditions is 36:16. The ratio of their rates of diffusion is 2:3.
2. When a mixture of 32.06 grams of sulfur and 55.84 grams of iron is heated, all of the sulfur and all of the iron combine, but, if a mixture of 32.06 grams of sulfur and 58 grams of iron is heated, some iron remains uncombined.
3. 24 parts, by weight, of carbon are combined with each 4.032 parts, by weight, of hydrogen to form ethylene, while 12 parts, by weight, of carbon combine with each 4.032 parts, by weight, of hydrogen to form methane.
4. Pressure remaining constant, a gas measure 500 ml. at 20°C; at 0°C the volume of the gas is 465.8 ml.
5. The destruction of one standard mass unit of matter gives rise to 931 m.e.v. (m.e.v. stands for 1 million electron-volts, an energy unit)

Second Part

I. The atoms of elements R, S, T, and X have outer shells respectively of 8,1; 18,2; 8,7; and 18,8. Their atomic numbers increase in the order of T, X, S, and R. From this information indicated:
1. Which elements are metallic and which non-metallic?
2. Which element is most apt to be radio active?
3. Which has the largest radius?
4. Which of these elements would combine among themselves?
(a) Write formulas for any combinations which occur.
(b) Are the combinations ionically or covalently bonded?
5. Write formulas for
(a) the simplest ion of T
(b) the simplest ion of S
(c) the hydroxide of this group of elements that is the strongest base

II. Answer *one* of the following
1. By discussion and diagrams where possible, show that you understand the three main types of valence bonds—electrovalent, covalent, and co-ordinate covalent or dative bonds. Include the following terms in your discussion: polar, non-polar, ionic, Coulomb forces, vander Waals forces, dipole, electronegative.
2. Discuss the structure of the atom. You may want to include the following in your answer: spectrum of the elements, the Bohr atom, electrons in space, diagrams.

Third Part

I. Write complete, balanced equations for the following:
1. two methods for the preparation of oxygen
2. reaction of an active metal with water
3. oxidation of a non-metal followed by the addition of water to the product
4. reduction of cupric oxide by hydrogen
5. reaction of a hydrocarbon (such as CH_4) with oxygen in excess

II. Problems
1. The molecular weight of a gas is 52. It is composed of carbon 46.15 per cent and nitrogen 53.85 per cent. Find its correct formula.

2. Zinc reacts with chlorine as follows:
   $Zn + Cl_2 \rightarrow Zn\,Cl_2$
   (a) If 327 mg. of zinc is used, how many millimoles of zinc?
   (b) How many millimoles of chlorine will be needed for reaction with this quantity of zinc?
   (c) If the chlorine is used at STP, what volume of the gas will be used?
   (d) What weight of $Zn\,Cl_2$ will be obtained from the above reaction?
3. How many liters of oxygen at 20°C and a pressure of 750 mm. will be formed by the electrolysis of 4.5 g. water? Set up the problem. Indicate the answer, giving the correct unit.

Atomic weights:

C	12
N	14
Zn	65.4
Cl	35.5

Optional: Do this only after you have done every thing you can on the above. State two laboratory methods that may be used to determine the equivalent–weight of an element. Are both methods equally useful? Why? Discuss one method briefly, but completely.

Final Examination—End of Year

I. State conclusions you would draw from each of the following observations:
   A. When a white solid is warmed with sodium hydroxide solution, a pungent gas, which turns moist pink litmus blue, is formed.
   B. When silver nitrate solution and nitric acid are added to a solution, a white precipitate is formed.
   C. When a gas is passed into lime water, the solution turns milky.
   D. When manganese dioxide and sulfuric acid are warmed with a given white solid, violet vapor appears.
   E. Show clearly how you would distinguish between:
      1. A chloride, a bromide and iodide
      2. A sulfide and a sulfate
      3. A nitrate and a nitrite
      4. A soluble ferrous and a soluble ferric compound

II. (1) Diagram the structural formula for each of the following and (2) indicate the type of chemical bond.
   A. Carbonic acid
   B. Sulfuric acid
   C. Sodium thiosulfite
   D. The hydrated cupric ion
   E. Nitrogen

III. Directions:
   1. Copy on your paper the solutions listed in column A
   2. Next to each put the number or numbers in column B which match
   3. Indicate the pH of the solution where possible

A	B
(1) .1M HCl	(1) concentrated
(2) .001M NaOH	(2) dilute
(3) 16M HNO_3	(3) strong
(4) .1M NaCl	(4) weak
(5) .1M $HC_2H_3O_2$	(5) acid
(6) 12M HCl	(6) base
(7) .01M NH_4OH	(7) salt
(8) 18M H_2SO_4	(8) solution turns pink litmus blue
(9) .1M Na_2CO_3	(9) solution turns blue litmus pink
(10) .1M $KC_2H_3O_2$	(10) solution has no effect on litmus

IV. Discuss briefly, but specifically, *4* of the following:

titration	allotropes
catalysis	amorphous forms
dehydration	ionization
isotopes	amphiprotic substances

V. Write chemical equations to represent the following:

1. When sulfur dioxide is bubbled into a solution of sodium hydroxide
2. Action of a soluble metal hydroxide on an ammonium salt
3. When hydrochloric acid dissolves in water
4. Ionization of tripiotic acid H_3PO_4
5. Reaction which occurs when a small piece of sodium is added to a .1M solution of aluminum chloride.

VI. *Commercial Preparation of Sulfuric Acid*

(1) combustion of the element sulfur, *or* the roasting of a sulfide

A. _____	B. _____
2A. oxidation of sulfur dioxide by an oxide of nitrogen	2B. "equilibrium" reaction between sulfur dioxide and oxygen to form sulfur trioxide
3A. reaction of the above product with water	3B. reaction of sulfur trioxide with 3% of water

Directions: Study the above diagram

(1) Write the equation

A, B } Name the process

2A (1) Write the equation
(2) Name the oxidant and the reductant
(3) What is the change in the oxidation state of sulfur in this reaction?
(4) What is the change in the oxidation state of nitrogen in this reaction?

3A (1) What type of reaction is this? Explain.
(2) What is a substance called (like this reactant) which forms an acid upon the addition of water?

2B (1) Write the equation
(2) Is the reaction exothermic or endothermic?
(3) What is used to shorten the time required for this mixture of gases to establish equilibrium?
(4) What effect on the yield of SO_3 would the following have?
(a) an increase in the concentration of oxygen
(b) an increase in the concentration of sulfur trioxide
(c) an increase in the concentration of sulfur dioxide
(d) the application of heat
(e) name and state the principle involved in predicting the above effects (a-d)

4. *Compare* these two processes as to purity of the sulfuric acid formed, strength of sulfuric acid that can be produced, and expense of preparation.

VII. Problems
(1) At what temperature does a 0.25m. solution of sugar in water boil?
(2) Calculate the lowering of the freezing point produced by dissolving 10 g. of glycerol, $C_3H_5(OH)_3$, in 100 g. of water.
(3) What is the normality and molarity of sulfuric acid if 20 ml. of it are exactly neutralized by 35 ml. of 0.11 N sodium hydroxide?
(4) A saturated solution of barium sulfate contains 10^{-5} mole of this salt per liter. Calculate its solubility product.

Optional:
(1) Calculate the molecular weight of a substance 10 g. of which in 100 g. of water lowers the freezing point of water 0.31°C.
(2) Discuss the halogens—similarities, relative activity, relationship of the position of this family in the periodic table to its chemical and physical properties, relative displacement ability, uses, *etc.*

C = 12.	Na = 23.
S = 32.	Ba = 137.4

GARDEN CITY SENIOR HIGH SCHOOL, Garden City, New York
Winfield S. Thompson, Principal

CHEMISTRY II

General Principles

I. General properties of matter
II. General properties of energy
Conservation of energy and mass
Heat energy and capacity
Temperature and temperature scales
Radiant and electrical energy
III. Structure of matter
Kinetic molecular theory
Relative weights of atoms and molecules
Isotopic weights
Internal structure of the atom
Nuclear charge and man
The electronic system

- Molecular structure
  - Molecular and empirical formulas
  - Covalent linkage
  - Structural formulas
  - Coordinate linkage
  - Organic molecules
- IONS
- States of matter
  - Gases
    - Laws of Boyle, Charles, Graham, Dalton, Avogadro
  - Liquids
    - Viscosity
    - Surface phenomena
  - Solids
    - Types of crystals
    - Hydrates
    - Double salts
  - Change of state
  - Solution
  - Colloids

IV. Equilibruim
- Van't Hoff's Principle
- Principle of Le Chatelier
- Physical equilibrium
- Chemical equilibrium
- Principle of man's action
- Equilibrium constant
- Electron, proton and ionic equilibrium
- Dissociation

V. Types of subsances
- Elements
- Compounds
  - Acids, Bases, and Salts
  - Hydroxides, Hydrous oxides, and hydroxy-salts
  - Ionic compounds
  - Polar and non-polar compounds
  - Organic compounds

VI. Chemical Transformation
- Factors determining reaction rate
- Types of chemical change
  - Proton transfer
  - Electron transfer (oxidation-reduction)
    - Valence change
    - Electrochemistry
  - Organic reactions
  - Nuclear reactions
- Weight and volume relations in a chemical change

The factual materials used to engender these principles include Oxygen, Hydrogen, the Halogens, the Sulfur family, the Nitrogen family, Organic Compounds, the light, ferrous, transition and post-transition metals.

The text used is *Fundamental Chemistry* by Horace G. Deming, John Wiley and Sons. 1957.

The laboratory manual is largely—*A Laboratory Study of Chemical Principles* by Freeman.

The supplementary reading consists of readings from:

The Restless Universe by Max Born
Readings in Inorganic Chemistry (Series I) by Goldblatt
Alembic Club Reprints
Classical and Modern Physics by White
The Story of the Quantum by Brown

PHYSICS

CEEB's Suggested Syllabus

AN ADVANCED secondary-school course in physics should aim at developing the student's abilities in several areas. The student who deserves advanced placement and credit in college should be able to:

1. Demonstrate a clear understanding of important physical concepts and principles, together with their restrictions or limitations
2. Read, understand, and interpret physical information, verbal and mathematical
3. Select the physical principles which are applicable to a familiar or unfamiliar situation
4. Use elementary mathematical reasoning—arithmetical, algebraic, geometric, and trigonometric—in a physical situation or problem
5. Explain in his own words the steps and line of reasoning used in solving a particular problem, that is,
   a. define the scientific terms and concepts used
   b. state what principles are being applied
   c. explain the successive steps
   d. interpret any results or conclusions
6. Recognize the reasons for the acceptance or "truth" of statements, whether by definition, by logical deduction from accepted laws or principles, or by generalization from experimental observations.

In the achievement of these goals, coverage of many detailed topics is less important than the development of a mature understanding of the basic principles and methods of physics, through careful treatment of well-chosen areas. The mathematical level of the treatment (for example, whether or not calculus is used) is likewise less important than the emphasis which is placed on physical reasoning.

The relation of such a course to the student's subsequent college program should be considered. Introductory college physics courses may be divided into three general types. Type A, sometimes called a "cultural" course, is largely descriptive with only simple arithmetical and algebraic

manipulations expected of the student. Students who take this type of course seldom take further work in the physical sciences. Type B is more rigorous and quantitative and expects a deeper understanding of the subject. Most of the principles of physics are formulated algebraically and skill in handling simple trigonometric functions is expected. Type C is the most rigorous and in a few cases covers a two-year period. It is paralleled, or sometimes preceded, by mathematics courses which include calculus, and the methods of calculus are used in formulating physical principles and in applying them to physical problems. The Advanced Placement Examination in Physics is designed to test for the depth of understanding of physics expected by the last two types of courses.

There are many circumstances in which it would be worth while for a student in secondary school to take an advanced physics course of type B mentioned above. He may be interested in specializing in physics or engineering, in chemistry or geology, or even in a non-science area. Credit or advanced placement for a year of college physics would provide him valuable time for enriching his college program. What is important is that, in his advanced physics course, he develop a much higher degree of *understanding* of physics than is customary in the usual secondary-school physics course.

But those students planning on specializing in physics or engineering in an institution which is outstanding in either of these fields will find that the first college physics course offered is very likely to be of type C described above. The reason for this is that calculus provides a more efficient and precise language for developing the concepts and principles of physics and hence permits faster progress in the field. Such students are advised that they will probably fare better if they place primary effort upon preparing themselves for the Advanced Placement Examination in Mathematics (which includes calculus). If they can also prepare themselves for the Advanced Placement Examination in Physics, using the calculus option, and show competence on both, then they are in a favorable position to be granted advanced placement in a type C course of one year in length. Experience has shown that when the type C course covers two years, well-prepared students have been granted advanced placement in part of such a course.

Course

Suppose a teacher is planning an advanced physics course of type B (without calculus). What should he include? Although he might expect to be provided with a syllabus of topics to be covered, such a procedure leads to difficulties. Not only would consensus on the details of the syllabus be hard to reach, but the examining committee feels that adherence to a list of topics runs the real danger of missing greater goals. College teachers are less concerned about details of coverage than they are about students developing a broad skill in dealing with ideas and prin-

ciples in physics. The objectives of an advanced course in physics are perhaps best presented by comparing it with the ordinary secondary-school physics course. Such courses differ, but the usual high-school course, like the simple type A course sometimes offered in colleges, is largely descriptive. A considerable portion of the time is devoted to confronting the student with a large number of scientific and technical situations, and simple examples of them. The textbook illustrations are mostly concerned with elements of engineering, explaining the operation of machines, automobiles, and diesel, jet, and rocket engines; the flight of airplanes; radio, television, the electron microscope, radar, and the like. Many physical principles are stated dogmatically as a set of rules. For those which are presented algebraically, the practice problems are usually carefully designed to be solved by direct use of formulas or equations.

On the other hand, the type B college course for which a student might earn advanced placement covers about the same material but with a different emphasis. Descriptive applications are not ignored, but they receive less attention. The treatment is more analytical, expressing a larger number of physical principles in algebraic form, reducing the number of arbitrary rules to be remembered. It is less dogmatic in that there is greater attempt to deduce a number of principles from a few basic postulates, as Archimedes' principle can be derived from pressure changes in a fluid. Definitions are precise. Finally, the problems asked of the students are not just exercises in using set formulas. They require first a basic understanding of principles, and then some imagination and insight into how one or more of these principles can be applied to the given situation.

An advanced course aimed at some of these more refined skills would still draw from the traditional areas of the subject: mechanics, heat, sound, electricity, light, and atomic physics; but there is no requirement that a teacher approach the subjects in the traditional manner. He need not assume that every detail in these areas is to be studied. An attempt to do so would result only in a superficial acquaintance with many topics and no mastery of fundamentals. Mechanics is clearly the most important area of a beginning course in physics, for many of the concepts and relations developed there carry over into the other areas. Here particularly the aim should be the development of maturity of understanding. A student should do enough work in mechanics to be thoroughly grounded in Newton's laws, the conservation principles, and consequences of these. He should be able to handle applications which use the simple trigonometric functions and which are expressed in either British or metric units. He should be able to make calculations on a slide rule. The same effort to grasp fundamentals should be carried over into the other areas studied. To accomplish this greater degree of understanding will probably require about fifty per cent more time than is spent on a good standard secondary-school course.

Selecting a text is a problem, for no single title or group of titles can be specifically recommended. Many publishing houses today are producing texts at this level. To make a good choice from such a number is a difficult task for any teacher, especially one who has had no experience with a course of this type. It is suggested that a teacher faced with this problem consult two or three college physics teachers in institutions in his region for their recommendations. Even though the students may follow only one text, the teacher would do well to have two or three others for his own reference. In many cases these texts contain substantially more material than can be covered in a one-year type B course. Hence the teacher will need to omit a number of sections or chapters in order to have adequate time to treat fundamentals thoroughly.

If the teacher finds that his students are taking advanced mathematics and wish to make use of calculus in their advanced physics, then his choice of text should correspond. Although not as numerous as texts for the type B course, there are several which use calculus sparingly at first and more fully later on as the students develop skill in their concurrent advanced mathematics. The teacher should make as full use as possible of the richness afforded by the calculus concepts, and not be satisfied merely with calculus manipulations.

In planning an advanced physics course, thought must be given to the laboratory side of instructon. In classwork, textbooks, and problems, most attention is paid to idealized situations: friction is assumed to be constant or absent, meters read true values, heat insulators are perfect, gases follow the ideal gas equation. It is in laboratory work where the validity of these assumptions can be questioned, where the student confronts nature as it is rather than in idealized form. Therefore, to derive maximum benefit from laboratory experience, the student should do far more than follow a set of detailed instructions in perfunctory fashion. Though much of his work will be based upon deductively derived relations, he should have some opportunity to see how generalizations are arrived at *inductively* from empirical observations. His instruction should emphasize an increased level of difficulty, more detailed analysis, precision in measurements, consideration of "significant figures," and the use of more complex graphs than are found in the usual secondary-level physics course. It is unnecessary to stipulate any list of experiments to be performed. Individual schools and colleges differ widely in the ones they like to use. The governing factor is the equipment available. If a nearby college or university affords equipment and opportunity, the teacher may be able to make arrangements whereby a student may have access to facilities beyond those available at his own school. Participation in "school science talent fairs," or similar competitions, is acceptable as meeting part of the laboratory work requirements.

Examination

In the Advanced Placement Examination in Physics, which is three hours in length, it is recognized that not all students will have studied the same topics. For this reason some choice of questions will be available. It will also be possible for a student to reveal genuine comprehension of the subject without earning a nearly perfect score.

Reference has been made above to the calculus option in this examination. This section, amounting to 20 or 25 per cent of the total test, is offered as an alternative to a similar section of about equal difficulty in which calculus is not needed. Anyone who desires may answer the calculus option. The decision is not finally made until the student has an opportunity to inspect the questions in the two alternative sections. Those students who also take the Advanced Placement Examination in Mathematics are advised to select the calculus option to demonstrate that they have some understanding of the applications of calculus to physics.

The examining committee believes that the test wll show whether the students have acquired the abilities listed in the opening paragraph of this statement. Most of these abilities are needed for solving problems in physics, particularly if the problems require more than the mere insertion of numbers into a formula. A student may expect, therefore, to find a number of such problems in the test. Some will be answered objectively and others will require more than the mere insertion of numbers into a formula. A student may expect, therefore, to find a number of such problems in the test. Some will be answered objectively and others will require a carefully organized solution in the examination booklet, including, perhaps, a verbal explanation of the solution.

ADAPTED SYLLABUSES

Bethesda Chevy-Chase High School, Bethesda, Maryland
William G. Pyles, Principal

Students are recommended for Advanced Physical Science by consultation of the chemistry teachers, the academic mathematics teachers, and the junior counselor. Students are chosen on the basis of their cumulative records through the junior year with particular reference to achievement in chemistry and three years of academic mathematics. Both Physics and Advanced Physical Science are scheduled consecutively to provide a semester of Advanced Chemistry and a semester of Advanced Physics. These students must take Trigonometry in their senior year.

Objectives

Chemistry

1. To develop an understanding of the basic laws of chemistry and the conditions under which they operate
2. To teach a technique of balancing oxidation–reduction reactions

3. To develop an understanding of the kinetic theory

4. To develop an appreciation of the concept of equilibrium and an ability to calculate the effect of various factors upon the equilibrium

5. To develop an appreciation of the inductive method of arriving at scientific laws from experimental data

Physics

1. To provide opportunity for observing the development of important scientific princples by inductive and experimental methods

2. To provide opportunity to review and give practical employment to nearly all concepts developed in the regular Physics course

CONTENT

Chemistry—First Semester

1. *Basic laws*—Effect of recent discoveries, laws of conservation of mass, definite composition, multiple proportions

2. *Determination of Avogadro's Number*—Milliken's experiment, X-Ray diffraction

3. *Kinetic Theory*—Kinetic gas equation, basic gas laws

4. *Determination of formulae*—Molecular weights, atomic weights by chemical method, Cannizzaro's method, Dulong and Petit's law, specific heat of gasses, mass spectograph

5. *Properties and structure*—Basic structure of atoms, electrovalence and convalence, polar and non-polar molecules, types of crystal lattice

6. *Concentration*—Molar, normal, and metal solutions

7. *Speed of reactions*

8. *Equilibrium*—Law of mass action; ionic equilibria

9. *Oxidation*—Reduction

Physics—Second Semester

1. *Particle Dynamics*—Review of mechanics from first semester of regular course. Accelerated motion, mass and force, gravitation, conservation of energy and momentum, gas laws, kinetic theory and hear simple harmonic motion

2. *Particle Electrodynamics*—Subject matter developed concurrently with similar topics in regular Physics class. Electric charge, field, and potential difference. Electric currents and magnetic fields. Induction. Electronics (limited considerations in electronics)

3. *Atomic and Nuclear Phenomena*—Material covered less fully or not at all in regular Physics. Identification of the electron, isotopes, electromagnetic radiations, aspects of the Special Theory of Relativity and the Quantum Theory. The Bohr atom and aspects of its successors. Duality of waves and particles. Radioactivity. Nuclear processes. "Atomic Energy" and nuclear fission. Particle accelerators as time permits

Special Comment

Material for Advanced Physical Science (second semester) is selected mainly from the field of atomic Physics because of unusually high student interest, timeliness, and avoidance of particular problems and topics usually given in freshman Physics while contributing techniques for the solution of such problems. Students are expected to have taken Trigonometry and are introduced to selected techniques from Analytical Geometry, differentiation and integrations, statistics, and natural logarithms, although for the most part solutions are obtained with typical high-school mathematics. An able student taking this course in addition to Physics 1, RL, is expected to make a creditable score on the ETS Advanced Placement Program test in Physics.

Textbooks

Principles of Chemistry by Hildebrand and Powell
First Principles of Atomic Physics by Humphreys and Beringer

Supplementary References

Reference Book of Inorganic Chemistry by Latimer and Hildebrand
General Chemistry by Pauling
College Chemistry by Smith
Introduction to Concepts and Theories in Physical Science by Holton

Time Sequence

Advanced Physical Science meets five times a week for fifty-minute class periods.

Garden City Senior High School, Garden City, New York
Winfield S. Thompson, Principal

The Advanced Physics course is a second-year course in physics which is offered for seniors. Prerequisites are: Physics I, Chemistry I, and Trigonometry. The text is *College Physics* by Sears and Zemansky. The syllabus has been planned with the following considerations:

1. In agreement with the statement of the Physics Committee of the Advanced Placement Program, it is believed that "coverage of many detailed topics is less important than the development of a mature understanding of the basic principles and methods of physics." Thus stress is placed on the level of thought, rather than on a particular list of subject matter. A topic which offers many opportunities for analytical thought may be explored more deeply than one of equal importance in application, but of a more direct nature. This approach may also result in the omission of entire blocks of subject matter so that other parts of the subject which have more general importance may be dealt with "in depth."

2. A strong foundation in Mechanics is essential for a real understanding of other parts of physics, and once the concepts of Mechanics are grasped, other fields can be approached more efficiently. For these reasons, Mechanics is stressed in Physics II, and is the principal topic of study for the first semester.
3. The Physics I course is the standard Regents physics course. Thus all students who are taking Advanced Physics have already covered much of the accepted subject matter of physics, and what might otherwise be serious gaps in the second-year treatment have previously been dealt with.
4. A quantitative approach is used wherever the mathematical background of students warrants it. The analysis of problem materials; graphical presentation and manipulation of data; the correct use of algebra, geometry, and trigonometry; accuracy in computation; and the correct expression of a solution are all stressed. Students are required to use the slide rule.
5. Considerable emphasis is placed on the correctness and lucidity of written laboratory reports. Since the class is small and laboratory experiments are of a relatively long-term nature, the instructor is able to go over this written work in detail.
6. In general, the level of the work should be equivalent to that of a college introductory physics course. The experience of our graduates who have taken Advanced Physics has been that this hoped-for level of work has been realized. It will probably never be possible, with the time and equipment available, to duplicate the most rigorous type of pre-engineering college course. However, the mathematics department of the high school is now cooperating in a study of the possibility of introducing the use of the methods of calculus in Advanced Physics.

Subject Matter Outline

I. *Mechanics*
Vectors, composition and resolution
Statics, equilibrium, moments, and center of gravity
Motion, uniform and uniformly accelerated. Trajectories.
Mechanical energy, friction and power
Newton's Laws of Motion, mass and weight, impulse and momentum
Circular motion, rotation, and gyroscopes
Elasticity
Simple Harmonic motion
Fluids, hydrostatics, and hydrodynamics

II. *Heat*
Thermal behavior of ideal gases
Kinetic molecular theory
Elementary thermodynamics, Carnot's cycle and heat engines

III. *Electricity*
Electric charge, field intensity, potential and capacitance

Circuits, current and resistance, Kirchoff's Laws.
Alternating currents, inductance, reactance, impedance, resonance and power factor
Electronics, the determination of a and a/m, thermionic emission, diodes and rectification, triode amplifiers

IV. *Light*
Interference and diffraction

V. *Atomic Physics*
Quantum phenomena
The photoelectric effect
Spectra
Thermal radiation

The Advanced Physics Laboratory

An average of one period a week is allowed for laboratory work. This is accomplished by using class periods on two consecutive days every two weeks. In addition, students often continue their experimental work during the activity period which immediately follows the class, and frequently use laboratory facilities in the afternoon after school. Students usually work in pairs. Each completes an average of five experiments each semester. Experiments are usually assigned as problems, without written directions. Reference materials are available in the laboratory. A detailed report is expected, written by the individual student. Research projects are encouraged, and are regarded as meeting the laboratory requirement. Equipment is available, and procedures have been worked out for the following laboratory studies:

1. Static and dynamic friction
2. Measurement of the acceleration of a freely falling body
3. The empirical determination of a relationship
4. Torque and moment of inertia
5. Trajectories
6. Simple harmonic motion
7. Young's Modulus
8. Newton's Second Law and the concept of mass
9. The ballistic pendulum
10. Atwood's machine
11. Newton's Law of cooling
12. The coefficient of expansion of a gas.
13. The thermocouple and melting point of aluminum
14. Capacitance, capacitive reactance, and time constant
15. Inductance and inductive reactance
16. Series and parallel resonance
17. Thermionic emission and rectification
18. Static characteristics of a triode
19. The cathode ray oscilloscope
20. The diffraction grating
21. Radioactivity and the Geiger counter

MATHEMATICS

CEEB's Suggested Syllabus

THE advanced placement course in mathematics is a full-year course in calculus and related analytic geometry. A student seeking advanced placement in college mathematics, therefore, will be unable to take, in senior year, the subjects traditionally taught at that time, but must have completed the full secondary-school mathematics program prior to the beginning of the senior year. This is ordinarily to be accomplished: (1) by beginning the study of secondary-school mathematics in the eighth grade; (2) by taking up the subject matter of secondary-school mathematics at a faster rate; (3) by devoting more time to mathematics in the ninth, tenth, and eleventh grades; (4) through a reorganization of the content of the mathematics of the ninth, tenth, and eleventh grades; or (5) by a combination of one or more of these methods.

In particular, a revised program for the last three years of secondary school, culminating in a course that will be acceptable for advanced placement in college, was worked out in detail by the Mathematics Committee of the School and College Study of Admission with Advanced Standing (the predecessor to the Advanced Placement Program). A statement of these proposals may be found on the next page. As a background for this proposed three-year program, a course of instruction in elementary mathematics carried through the ninth grade is assumed. This instruction through the ninth grade should have developed skills, concepts, and factual knowledge covering:

1. The number system and the decimal representation of numbers
2. The elementary operations with integers, decimal fractions, and simple fractions
3. The vocabulary and ideas of elementary intuitive geometry
4. The use of algebraic symbolism in formulas and simple equations
5. The beginnings of graphical representation of data, of formulas, and of simple equations

The traditional program for the tenth, eleventh, and twelfth years now consists generally of the following subjects:

1. A one-year course in demonstrative geometry
2. A course in intermediate algebra
3. A course in trigonometry, and either solid geometry or advanced algebra

The 1953 proposals transformed this traditional three-year program into the following:

1. A course for the tenth year, stressing deductive thinking, but designed also to introduce the student to new subject matter from geometry, algebra, simple trigonometry, and simple analytic geometry

2. A course for the eleventh year, consisting of a continuation of algebra, analytic geometry, and trigonometry, and thus providing a modest introduction to analysis

3. A twelfth year course continuing analytic geometry and presenting substantial amounts of differential and integral calculus

These proposals constitute a combination of methods (2) and (4) on the previous page; that is, they involve both a reorganization of content and an acceleration of pace in the tenth and eleventh years.

The *Report of the Commission on Mathematics* of the College Entrance Examination Board also proposes a reorganization and revision of the mathematics curriculum of grades 9, 10, 11, and 12. An advance description of the Commission's program may be found in an article by the Executive Director of the Commission entitled "Mathematics for Today" in the *College Board Review*, Winter 1958, No. 34, pages 7-10.

The Commission believes that students who wish to prepare for advanced placement in college should cover the entire content of its four-year curriculum by the end of the eleventh grade, by beginning the course in the eighth grade, or by acceleration, or by giving additional time to the study of mathematics in one or more of the grades below the twelfth.

Twelfth-Year Course

Under any of these proposals, the advanced placement course planned for the twelfth year—calculus and related analytic geometry—parallels the freshman course now given in many colleges. It is achievement in this course for which advanced placement and credit is given by many colleges. It is, accordingly, achievement in this course that the Advanced Placement Examination in Mathematics is designed to test. The primary objective of the course is to give a substantial training in differential and integral calculus, with sufficient applications to bring out the meaning and importance of the subject.

The following outline describes in detail the suggested twelfth-year course, and, consequently, the scope of the Advanced Placement Examination in Mathematics.

1. Analytic geometry review and extension
   a. Rectangular coordinates
   b. Distance and slope
   c. Parallelism and perpendicularity
   d. Equations and graphs
   e. Line and circle
   f. Directed lines
   g. Other conics
   h. Curve tracing
   i. Parametric equations and polar coordinates
2. Differential calculus of algebraic functions
   a. The function concept

b. Absolute values and inequalities
c. Definition and basic properties of limits
d. Fundamental ideas of continuity
e. Slope of a curve, average and instantaneous rates of change
f. Definition of the derivative
g. Formal differentiation
h. Implicit functions and implicit differentiation
i. Differentiation of composite functions and of parametrically defined functions
j. Higher order derivatives
k. The differential and its use in approximation
l. Rolle's theorem and the theorem of the mean

3. Applications of differential calculus
   a. Tangents and normals
   b. Curve tracing, maximum and minimum points, points of inflection, horizontal and vertical asymptotes
   c. Problems leading to maximum and minimum values, both relative and absolute
   d. Rate problems and related rates
   e. Velocity and acceleration
   f. Properties of conic sections involving tangents

4. Integral calculus of algebraic functions
   a. The inverse of differentiation
   b. Integration of simple expressions, basic formulas
   c. Integration by substitution
   d. Simple differential equations with initial conditions
   e. Intuitive development of the definite integral as the limit of a sum
   f. Intuitive treatment of the fundamental theorem of the integral calculus
   g. Evaluation of simple definite integrals
   h. Approximation of definite integrals by the trapezoidal rule

5. Geometric and physical applications of integration
   a. The area under a curve
   b. Areas between curves
   c. Volumes of revolution
   d. Volumes by slicing
   e. Motion in a straight line
   f. Work

6. The calculus of elementary transcendental functions
   a. Exponents and logarithms
   b. The exponential and logarithmic functions
   c. The inverse relationship of these functions
   d. The derivatives of e^u, $\log_e u$ and $\log_a u$

e. The integrals of $e^u du$ and $\frac{du}{u}$

f. Trigonometric functions of real numbers

g. Limit of $\frac{\sin x}{x}$ as $x \to 0$

h. The derivatives and integrals of sin u and cos u

i. The derivatives and integrals of other trigonometric functions

j. Parametric representatives involving trigonometric functions for curves such as the ellipse, hyperbola, and cycloid

7. The applications as listed in 3 and 5, above, when the functions involved are transcendental. Use of simple trigonometric substitutions in integration.

The topics listed above are treated in many textbooks. Those that combine the subjects of analytic geometry and calculus are perhaps most suitable for this purpose, although separate books can also be used. A list of available textbooks, with comments, is given in the *American Mathematical Monthly* (Vol. 62, 1955, pages 265-288). It is also suggested that teachers of this course seek the advice of departments of mathematics in colleges in their vicinity, as well as of colleges to which their students may be applying.

It should be emphasized that this course presupposes a thorough knowledge of algebra and analytic trigonometry, and that additional work in elementary analysis would be highly desirable. In particular, a study of functions, including polynomial, power, exponential, logarithmic, circular, and inverse circular functions, to an extent greater than that now commonly included in secondary-school mathematics, would be highly desirable. Most schools will find that they will be unable to achieve adequate preparation for the calculus course described above by the end of the eleventh year, except for the group of able students whose work in the earlier years can be accelerated.

Such schools may wish to devote about half a year only to calculus and geometry. In this time they would, no doubt, be able to take up only the calculus of polynomial functions or at most of algebraic functions. Such a course will *not* prepare a student adequately for the questions on the Advanced Placement Examination in Mathematics. As noted above, this examination is designed to cover a full year's work in calculus and analytical geometry.

As to whether such a half-year's course in calculus is desirable, opinions differ. Certainly it would be valuable in the sense of general education for a student not planning to continue the study of mathematics in college. Some colleges may have their freshman programs so organized that this course could receive appropriate recognition in placement or even advanced standing. The Commission on Mathematics, however, has expressed the opinion that a half-year course in probability and statistical inference is to be preferred, and that, except for thorough full-year ad-

vanced placement courses on the one hand, and an informal, intuitive introduction to the concepts of derivative and anti-derivative of polynomials included in an elementary analysis course, on the other, secondary schools should leave the teaching of calculus to the colleges. The designation of calculus as the Advanced Placement Course in Mathematics is in fact recognition of calculus as a college-level course.

Examination

The Advanced Placement Examination in Mathematics, which is three-hours long, seeks to determine how well a student has mastered the principles, skills, and techniques of the subject matter outlined above. The test normally consists of (1) a multiple-choice section testing proficiency in a large variety of topics and (2) a problem section, which requires solutions in detail, giving the student an opportunity to demonstrate his ability to carry out proofs and solve problems involving a more extended chain of reasoning. The test is designed to give a complete coverage of the subject matter, and it is not expected that any one student will answer all the question.

ADAPTED SYLLABUSES

Oak Park and River Forest High School, Oak Park, Illinois
Kenneth W. Lund, Superintendent

Accelerated Courses, Mathematics—Open by special permission to students of superior intellectual ability

Sophomore Year

1. *Geometry A*—Plane and Solid Geometry, Two Semesters
   Textbooks: New Plane Geometry by Welchons and Krickenberger, Ginn and Company; and *Solid Geometry* by Morgan and Breckenridge, Ginn and Company

Junior Year

2. *College Algebra A*—This semester course covers the two courses called in some parts of the country, *Advanced and College Algebra*, and in some, *Intermediate and Advanced Algebra.*
   Textbook: College Algebra by Rosenback and Whitman, Ginn and Company
3. *Trigonometry A*—One semester
   Textbook: College Trigonometry by Hart, D. C. Heath and Company

Senior Year

4. *Advanced Mathematics I and II*—One semester each
   Textbook: Fundamentals of College Mathematics by Johnson, McCoy, and O'Neill, Rhinehart and Company, September 1958
   Description: This course includes *Analytic Geometry* and a strong introduction to the *Calculus. Analytic Geometry* topics included

are: the straight line; equation of a locus; curve tracing; conic sections; translation and rotation of axes. *The Calculus* topics include: function and limit; differentiation of both algebraic and transcendental functions. Applications include: tangent and normal lines to a curve; tests for maxima and minima; applied maximum and minimum problems; velocity and acceleration; related rate problems. The students study the fundamental theorem of *The Calculus;* integration of certain algebraic functions by the power formulas; integration of trigonometric and exponential functions. Applications include: area under a curve; area between two curves; work problems; moment and center of gravity; fluid pressure.

Calculus with Analytical Geometry by Johnson and Kiokmister

St. Louis University High School, St. Louis, Missouri
Reverend Gerald R. Sheaham, Principal

Course Description—Senior Mathematics—Advanced Mathematics Section. (Trigonometry, Analytical Geometry, Calculus)

Method of Instruction—A special advanced course in mathematics was organized on the twelfth-grade level. Only students who did exceptional work in junior mathematics were permitted to register for the course. The class met five periods per week. A period consisted of forty-five minutes. Students spent five hours minimum per week in home preparation. Two students of exceptional ability engaged in some independent study.

Content—We did not follow the Advanced Placement Syllabus, but rather used it as a guide. We were able to cover major portions of the syllabus. A detailed description of the course follows, indicating the sections in the advanced syllabus which were covered and those which were not.

Algebra—number system, function concept, polynomials, mathematical induction, binomial theorem (covered completely)

Analytic Geometry

a. *Topics covered*—rectangular coordinates, distance and slope, equations and graphs, line and circle, parabola, ellipse, hyperbola, directed lines, parametric equations, rotation and translation of axes (covered completely)

b. *Not covered*—polar coordinates, curve tracing.

Differential Calculus

a. *Topics covered*—definition and properties of limits; slope of a curve, average and instantaneous rates of change; derivative-definition and interpretation; differentiation of polynomials;

implicit functions and implicit differentiation; differentiation of composite and parametrically represented functions; derivatives of higher order; tangents, maximum and minimum, inflection points; maximum and minimum problems; velocity and acceleration; rate problems.

b. *Not covered*—differentiation of: trigonometric functions, hyperbolic functions, exponential functions; Rolle's theorem, and theorem of the mean; properties of conics involving tangents.

Integral Calculus

a. *Topics covered*—the inverse of differentiation; integration of simple expressions; area under a curve; definite integral; fundamental theorem of the integral calculus; geometrical and physical applications of the integral; area between two curves; length of an arc; volumes of solids of revolution; work; falling body

b. *Not covered*—integration of trigonometric functions, logarithmic, or exponential functions, *e.g.,* sin u du, cos u du *etc.;* the natural log, number e; derivatives of inverse trigonometric functions; indefinite series

The course in the senior year embraces the following areas with the following time allotments: Analytical Trigonometry, 11 weeks; Analytical Geometry, 15 weeks; Calculus, 7 weeks.

Texts: The principal text used for the course was: *Introduction to College Mathematics* by M. A. Hill, Jr., and J. Burton Linker, Henry Holt and Co. Revised ed., 1955. This text was supplemented by sections from the following texts as indicated:

Thomas, George B. *Calculus and Analytical Geometry.* Addison-Wesley Pub. Co., 1953. Chap. 3, pp. 79-103; Chap. 4, pp. 132-168.

Love, Clyde E., and Earl D. Rainville. *Differential and Integral Calculus.* Macmillan, 1954, 5th edition, Chapter 6, pp. 112-118.

Middlemiss, Ross R. *Analytic Geometry.* McGraw-Hill, 1955. Chap. 1, entire, and Chap. 6, entire.

Douglass, Raymond D., and Samuel D. Zeldin. *Analytic Geometry.* McGraw-Hill, 1950. Chap. 3 and 4.

Supplementary material was given to the students from the above texts in the form of lecture material, mimeographed notes, and problems taken from the text.

WILLIAM PENN SENIOR HIGH SCHOOL, York, Pennsylvania
O. Meredith Parry, Principal

Basic Text: *Differential and Integral Calculus,* Volume I, by R. Courant, 1957 edition. Supplementary Text: *Elements of Calculus* by Granville, Smith, and Longley, 1946 edition.

Material Covered: Chapters I to V and Chapter XI of Courant. Chapters I through XIII and Chapter XVI of Granville, Smith, and Longley.

The sequence of units is as follows:

I—Introduction: continuum of numbers, concept of function, functions of integral variable, limits of sequences, functions of a continuous variable. Chapter I, Courant. Special emphasis on limits of sequences. Most problems in the chapter were worked.

II—a. The definite integral. Numerous integrations were performed directly from the definition including sin x and the power function.

b. After this last was obtained, it was used as a formula, and the applications to area, volumes of revolution, centroids, and work given in problems of Granville, Chapter XI.

III—a. The derivative. Courant, Chapter II, Rules for differentiation of elementary functions, Courant, Chapter III.

b. Drill in formal differentiation: Granville, Chapter IV.

c. Applications of the derivative to geometry, maxima and minima, related rates, velocity and acceleration, Granville, Chapters V and VI.

Many differentiations were performed directly from this definition. The class had had considerable elementary experience with the derivative in their eleventh-grade course.

IV—a. Review of the definition of a definite integral, and further integrations from the definition.

b. The indefinite integral, and the fundamental theorem of the calculus, Courant, Chapter II.

c. The Chain rule, Courant, Chapter III.

d. Drill on simple antiderivatives, and constants of integration. Granville, Chapters VIII and IX.

e. Applications of the integral calculus whose integrals could not be obtained without substitutions, Granville, Chapter XI.

V—a. The logarithm. The integral definition was used. Theory and problems, Courant, Chapter III, page 167, *etc.*

b. The exponential functions as the inverse of the logarithm, Courant, Chapter III.

c. Differentiations of logarithmic and exponential functions, Granville, Chapter XII.

Note: Both integration and differentiation of the circular functions had been given previously in the Courant, but further work was taken at this point.

d. Differential equation definition of the exponential function and problems, Courant, Chapter III, pp. 178-183.

e. The linear differential equation of the first order with constant coefficients, Courant, Chapter III; Granville, Chapter XXI, pp.

395-398; Agenew, Chapter III, including the use of integrating factors.

f. The hyperbolic functions, their identities, derivatives, and integrals, Courant, Chapter III, pp. 183-190.

g. Order of magnitude, Courant, Chapter III.

VI—Formal Integration, Courant Chapter IV (Almost all of the problems in Courant, Chapter IV, were worked as well as numerous problems in Granville, Chapter XVI.)

a. Method of substitutions

b. Integration by parts, the Wallis Product

c. Integration of rational functions; partial fractions

d. Improper integrals

e. Arithmetic, geometric, and harmonic means of a function. Polya and Szego, Vol. I, Chapter II.

VII—Applications of the differential and integral calculus, Courant, Chapter V.

a. Parametric representation. Differential and integration in parametric form

b. Length of arc

c. Area of surface of revolution

d. Areas in polar coordinates

e. Investigation of various special curves: the cycloids, the Folium of Descartes, the pedal curve of a curve

In addition to this course of study, the candidates for advanced placement attended special non-credit sessions which met three times per week. The purpose was review and a deepening of their theoretical knowledge of the elementary calculus. The course of study of this special section was as follows:

1. The infinite series solutions of the equation $y'' + y = 0$. The development of the theory of the circular functions from the properties of these solutions; *i.e.*, the identities, the graphs, range of variation, periodicity, *etc.*
2. The exponential function as the infinite series solution of the equation $y' - y = 0$.
3. The linear differential equation of the second order. Courant, Chapter XI, with special emphasis on interpretation of the constants, and determination of the constants to suit given initial states
4. A more systematic approach to the solution of linear differential equations. Agnew, Chapter 6 (in part)
5. Use of operators to solve the linear equation with constant coefficients. Agnew, Chapter VIII
6. Since the group was small, extensive board work was possible. Much review work was woven into the new. Harder problems,

such as the miscellaneous problem in the rear of Courant, and some from the Aufgabe and Lehrsatze by Polya and Szego were used.

Note: This is the work taken up to the time of the advanced placement test. For the rest of the year, we may attempt a systematic discussion on convergence of infinite series which were used during the year. But I am not certain. Some of the students are asking for a brief review of probability. Perhaps this can be done and the calculus employed

LITERATURE AND ENGLISH COMPOSITION

CEEB's Suggested Syllabus

IN 1959 there will be one Advanced Placement Examination in Literature and English Composition, replacing the separate examinations in composition and in literature. The course description which follows makes clear that proficiency in composition and the ability to read imaginative literature with an accurate and sensitive understanding are both essential.

LITERATURE

Advanced work in literature is more concerned with the quality than with the quantity of a student's reading. It does not, therefore, attempt to "cover" either a large number of works or any given body of literature. It rather tries to develop in the student those skills which characterize a mature reader. By analyzing patterns of structure, rhetorical devices, techniques of characterization, the use of parallels and contrasts, and above all the connotative values of words, phrases, and figures of speech, the student develops a respect for the precision with which a literary work not only communicates ideas but defines specific attitudes and evokes particular emotional responses. The student thereby becomes not only a sensitive reader, but also a responsible one.

Students selected for the advanced course should enjoy reading and be capable of recognizing that an interpretation of a text which respects all relevant literary evidence is superior to an interpretation which is merely one reader's subjective response.

COMPOSITION

Advanced work in composition teaches students to write well about something important. The core of training in composition is therefore the frequent writing and careful revision of substantial themes on subjects sufficiently mature to challange both thought and linguistic powers. These themes should be distinguished by superior command of *substance*, thoughtfully and interestingly presented.

A good student writer will demonstrate a high level of proficiency in *organization*, combining clear sentences in well-shaped paragraphs and arranging these in an order clear to the reader as well as to himself. He is aware of the importance of organic structure, distinguishes the major parts and the subdivisions of the whole, and deliberately develops his paper with a sense of controlling purpose and orderly progression.

However, a neat pattern of paragraphs is not in itself proof of, and can never be an acceptable substitute for, sound and compelling *logic*. The good student writer will be sufficiently an analyst of his own ideas to avoid *non sequiturs* and redundancies. He is careful to support general statements with specific proofs; he distinguishes between causes and effects, between subjective reactions and objective judgments; and he has cultivated the ability to select fresh rather than hackneyed illustrations.

A good composition exhibits a feeling for *style*, displaying both *precision* and *fluency*. An able student will make use of the varieties of English sentence structure. His sensitivity to sentence movement will be heightened by exposure to good models; a strong student, however, will have absorbed such influences well enough so that his style remains his own. His vocabularly will be distinguished not so much by its extent as by its exactness and appropriatness.

It should go without saying that a student in an advanced course will have mastered the *mechanics* of writing. His command of the conventions of spelling, capitalization, and punctuation will be firm; his syntax will be clear and accurate.

Course

Advanced or college-level courses in English conform to no specific pattern. What follows is, therefore, not a description of a standard course, but an attempt to indicate where the chief emphases in such a course should fall.

For adequate instruction, small sections (a maximum of 20 students) are highly desirable. No teacher can respond adequately to the demands of an advanced course unless he is able to read and judge a great deal of student writing (approximately a theme a week) and to conduct the teacher-student conferences which are indispensable. Small sections also permit the individual participation in class discussion necessary for work on an advanced level. In general, time and attention should be divided about equally between composition and literature.

Literature

No two teachers of literature agree on a list of titles which must be studied. But nearly all of them maintain that it is better to study a few works thoroughly than to read many works superficially. Because the literature studied should offer a serious challenge, popular melodrama and sentimentality are to be avoided. On the other hand, the freshman

student should probably not be confronted by such complex and subtle works as *Ulysses* or *The Waste Land*. Within the range of a student's ability, a progression from relatively simple to more complex works is desirable. A few translations (Homer, Greek tragedy, Ibsen) might well be included, but literature in English written since the middle of the sixteenth century is undoubtedly best suited for close reading.

Since the advanced course is primarily concerned with the understanding of any piece of literature rather than with the works of any one period, the works themselves are of greater importance than biographical and historical information. Such information should be introduced only when it clearly contributes to the understanding of a given text.

A student in a college-level course should be able to recognize and discuss general ideas or themes as well as literary techniques, but the ability to formulate an idea and identify an artistic device is of little value unless the student can demonstrate the relationships between form and content.

Composition

The writing in an advanced placement course should be primarily analytical, expository, and argumentative. A good many themes should be written as carefully prepared outside assignments, but impromptu themes should be a regular part of the course. Occasional opportunities for writing of a more creative sort may also be offered.

EXAMINATION

The Advanced Placement Examination in Literature and English Composition is three hours in length and includes questions testing the student's ability in both literature and composition.

ADAPTED SYLLABUSES

SAN DIEGO CITY SCHOOLS, San Diego, California
George V. Hall, Assistant Superintendent

Our program is quite similar to the program for admission to colleges with advanced standing. It has been in operation for the past three years and offers college-level classes in English, social studies, physics, and mathematics to the top three to eight per cent of our twelfth-grade students. Teaching guides and student syllabuses have been prepared for the other honors courses.

There are two principal criteria for admission of students to honors courses: (1) the grades made in prerequisite courses and (2) the performance of candidates on standardized achievement tests in specific subject areas. As a general rule, no students may enroll in more than two honors courses.

Honors course college-level materials are provided by central funds, and individual school budgets are not affected. In the English and composition honors course, for instance, school district funds have

made available two college-level texts for each student; three supplementary texts for classroom use; and thirteen books and four periodicals for use in a reference library.

Major Objectives

Mastery of Writing—Through frequent and stimulating written assignments to develop in the student the desire and the skill to write correctly and forcefully, by directing attention to clarity and persuasiveness of expression rather than the mechanics of writing

Relation of Writing to Literature—To maintain an unbroken link between, on the one hand, the student's endeavor to sharpen and widen his vocabularly and to increase his powers of expression and, on the other, his study of "the best that has been thought and said"

Enthusiasm for Literature—To awaken and keep alive an active, discriminating joy in literature, with a view to liberating through independent study and research the student's own potential for the discovery of a high personal standard of literary discrimination

Content of Literature—To assist the student through study of that which is enduring in prose and poetry to acquire a solid foundation for an expanding knowledge and appreciation.

Techniques for College—To master the techniques necessary for college: taking lecture notes, making critical analyses, developing and writing research papers, answering long essay-type examinations, participating effectively in class discussions, and making committee reports

Standards, Uniformity, and Evaluation

A. Seventy per cent conformity of subject matter; thirty per cent leeway for class deviation.

B. Quarterly conferences of participating teachers with consultant service from administration and San Diego State College faculty. (This group will decide whatever city-wide testing is considered desirable for identification of well-known authors and literary types, competency in using techniques for written and oral English, and ability to interpret a work of literature.)

C. Student-teacher evaluation of individual student's purposes at least quarterly. Student-teacher evaluation of total course progress at least quarterly.

D. Blue book examination each quarter covering the material studied. (Two-hour examination if possible.)

E. Classroom folders of all written work to be maintained for each student, including essay tests and assignments completed during a single class period. (Written work will total approximately 10,000 words a year, or 2,500 words a quarter. The folder of accumulated writing will become the property of the student to aid in his proper placement for college admittance.)

F. Two days a week set apart for student conference periods and three days a week for class instruction. (See *College Admission with Advanced Standing*, pp. 26-27, for suggestions as to procedure.)

G. The thorough study of only a few authors. (Many will be known only by identification or by one major work. One or two authors or works should emerge each quarter as primary texts. Minimum city-wide requirements for each basic selection are listed in the section, TIME PLAN FOR COURSE.)

H. Each student to be responsible for enriching the course by making wise selections for collateral reading. (Often the selections will be suggested by the supplementary lists and the individual student's choice of research paper subjects. See *Good Reading*, "100 Significant Books," p. 8, and "Historical Periods of Greece," Rome, and so forth, p. 11 ff.)

I. To separate research projects to be assigned:

1. The first practice assignment during the first or second quarter will help the student: (a) master the techniques of research, bibliography, note-taking, and use of outlines; and (b) present specialized information to the class in an *oral* report which will augment the basic course of study.
2. The second assignment, preferably during the third quarter, will help the student: (a) reinforce the technical learning of the first assignment; (b) continue to enrich the class; and (c) culminate in a completed research paper correct in format and style.

TIME PLAN FOR COURSE

First Quarter

Introduction to Composition (two or three weeks)

Groundwork for relating the written work of the course to the literature studied. Use Watt: *An American Rhetoric*, Chaps. I, II, and III.

1. Initial instruction for use of texts, reference books, and magazines to improve student's writing ability
2. Assignment of first theme (Suggestion: student to analyze his own strengths and weaknesses in composition and literature)
3. Teacher-student conference to evaluate student's competency on basis of first theme
4. Establishment of standards for a written assignment of any kind whether it be a short analysis, a book review, a research paper, or imaginative writing, with (a) emphasis on organization and clarity when written assignment must be completed within class period, such as themes with assigned subjects or essay tests; and (b) additional requirement of correct mechanics and attractive format for formal papers prepared outside of class (Note: college-level papers are preferably typewritten.)

5. Use of articles in literary periodicals, such as *Atlantic Monthly, Harper's, New Yorker, Saturday Review* as basis for précis writing and critical evaluations. (See Warriner, pp. 417-27.)
6. Mechanics of outlining.

CONCEPT OF THE HERO

Literature: Epic, Ballad, and Metrical Narrative
Odyssey, Books 7-12 (Rouse translation in paperback)
See *Odyssey of Homer* for comparing Samuel Butler's translation with that of Rouse; also "Preface" and "Introduction" for historical background.
Woods, "Warrior, Priest, and Commoner," pp. 4-24
Beowulf: Prologue and Part I
Old Ballads (Omit "Hind Horn," "Thomas Rymer," "Kemp Owen," "Young Waters," "Robin Hood's Death and Burial.")
Chaucer: Prologue to *The Canterbury Tales*
Sir Gawain and the Green Knight, pp. 66-88
Morte Darthur: pp. 143-44

Composition Related to Literature

1. *Expository writing* about the period and its literature (subject and type). (Format to be miniature research paper complete with two or three footnotes.)
   Study of Literary Types—(1) What is a folk ballad? (2) What is a literary epic? (3) What is the origin of an early epic? (4) Stylistic devices used by epic writers (in medias res, deus ex machina, similes, repetition)
   How later writers have borrowed from *The Odyssey;* for example, Fielding burlesques style of *Odyssey* in *Joseph Andrews.*
   Life in Chaucer's time as compared with today—(1) Guilds *versus* trade unions; (2) Gothic cathedrals *versus* skyscrapers; and (3) Chivalry *versus* twentieth century manners
   Compare the death of Arthur in Malory and in Tennyson.
2. *Creative writing* includes character sketches (use of *New Yorker* "Profile" technique in describing a character in *The Canterbury Tales);* parodies; (modern treatment of Homeric characters suggested by reading John Erskine's *The Private Life of Helen of Troy);* mock epic; and original ballads.

Oral Communication Related To Literature

Class discussion with student leaders; *panels* when several students have chosen the same or related supplementary material; *individual reports; oral reading* of poetry and plays for maximum enjoyment; playing good recordings; and *making recordings* of students' reading

Supplementary

Additional reading within the works listed as "Basic":
Homer, *The Iliad* (epic)

Milton, *Comus*—Compare the Circe episode in *The Odyssey* with Milton's *Comus.*
Song of Roland—epic of France
Benet, Stephen Vincent, *John Brown's Body*—a modern narrative poem with epic overtones
Crane, Stephen, *Red Badge of Courage*—a novel depicting problems of heroism in modern warfare
Eliot, T. S., *Murder in the Cathedral*—a modern re-enactment in play form of the murder of Thomas A Becket in Canterbury Cathedral
Chute, Marchette, *Geoffrey Chaucer of England*—an engaging account of Chaucer and his period
Kittridge, *Chaucer*—a good handbook on Chaucer
Mackaye, *The Canterbury Pilgrims*—an imaginative account of what happened to the Pilgrims when they arrived in Canterbury
Morris, William, *Defense of Guenevere* (Woods, pp. 1,000-1,004) cf. Malory's *Morte Darthur*
Tennyson, *Idylls of the King*—characters of *Morte Darthur* as conceived by a Victorian poet
Tristan and Iseult—Robinson, Maeterlinck, and Masefield for modern poetic treatment
Scott, *Ivanhoe; Talisman*
Davis, William S., *Life on a Medieval Barony* cf. *Ivanhoe*
Kelly, Amy, *Eleanor of Aquitaine and the Four Kings*—a scholarly biography of the twelfth century
Inglis, *Adventures in English Literature,* p. 99, for further references about the period

Second Quarter

MANNERS AND MORALS

Literature: Drama, Psalm, and Sonnet

Woods, "The Brave New World and After," pp. 156-76
Shakespeare: *Othello,* 12 sonnets, and songs from the plays
The Bible: pp. 291-303
Milton: pp. 364-82
Pepys: pp. 425-34
Dryden: Introduction, pp. 440-41, from "An Essay of Dramatic Poesy"
Swift: Introduction, pp. 475-77, *A Voyage to Lilliput;* "A Modest Proposal"
Addison and Steele: Introduction, pp. 455-57, "The Spectator Club," "The Country Sunday," "Consideration of Milton's *Paradise Lost,*" "A Young Lady's Diary"
Pope: Introduction, pp. 514-15, "Rape of the Lock," Canto III; from "Essay on Man"; "Epistle 2"
Johnson: Introduction, pp. 543, 555-56, excerpts from Milton, Dryden, Pope
Boswell: Introduction; pp. 566-69

Composition Related To Literature

Original diary in the manner of Pepys. See F. P. A.'s "A Modern Samual Pepys" in E. B. White's *A Sub-Treasury of American Humor.*

Origins of Greek or English drama—guilds as theatrical producers

Essay on life and time of period studied—customs and manners of Shakespeare's time; the Arts in Milton's time (or Pepys'); manners and morals of the 18th century; education, dress, or home life in the Age of Johnson

Satire of person, place, or condition—a Martian's view of present-day America

Original epigrams or couplets in the style of Pope

Comparison of Addison and Steele with Walter Lippman or Neil Morgan

An evaluation of a particular Shakespearean character

A Shakespearean quotation as a topic sentence for a paragraph to be developed by example

Comparison of Greek concept of the hero with Shakespearean concept

Literary allusions from mythology, from the *Bible,* from Shakespeare

Humor based on misuse of words—Mrs. Malaprop in *The Rivals* and Mrs. Slipslop in *Joseph Andrews*

Oral Communication Related To Literature

Research outline for an oral report

See Watt, *An American Rhetoric,* Chap. 12, pp. 344-80

See Cooper, *A Manual for a Research Paper*

See end of syllabus for Dr. Theobald's "Possible Subjects for the Term Paper."

Classroom reading—Goldsmith, *She Stoops to Conquer;* Sheridan, *The Rivals;* and an amusing 18th century play

Supplementary

Additional reading within the works listed as "Basic."

Greek plays for comparative study

Aeschylus' *Agamemnon* with O'Neill's *Mourning Becomes Electra*

Sophocles' *Oedipus* with Shakespeare's *Othello*

Sophocles' *Oedipus* with Jean Cocteau's *Infernal Machine*

Molière's plays for continental satire and humor

Additional Shakespearean plays—Compare Shakespeare's *Anthony* and *Cleopatra* with Dryden's *All for Love* (the characters of the two Anthonys) (romantic *versus* classical treatment)

Frost, Robert, *A Mask of Reason*—short play based on the story of Job

Goldsmith, *Vicar of Wakefield*—The Vicar had almost as many hardships as Job.

Rostrand, *Cyrano de Bergerac*—The Noble's Comparative Classics edition, compares Cyrano with *Romeo and Juliet;* also *Hamlet* with Sophocles' *Electra* and, O'Neill's *Beyond the Horizon.*

Bunyan, *Pilgram's Progress*—a religious allegory

Cervantes, *Don Quixote*—tragic story of an idealist; satire on chivalry
Graves, Robert, *Wife to Milton*—as though written by Mary Powell, the poet's first wife. Graves is *not* a Milton fan.
Literature of the Reformation and Renaissance—See Hibbard; also Inglis.
Orwell, George, *Animal Farm*—a modern social satire—cf. *Gulliver's Travels*, Part IV, "Land of the Houhynhmns"
Thackeray, *Henry Esmond*—a novel conjures up the atmosphere of the eighteenth century

Third Quarter

Beauty and Truth

Literature: Romantic and Victorian Poetry and Prose

Woods, "Revolution and Romance," pp. 588-608
Wordsworth: Introduction, pp. 660-62—"Lines Written in Early Spring," "Tintern Abbey," "She Dwelt Among Untrodden Ways," "Westminister Bridge" "It Is a Beauteous Evening," "I Wandered Lonely as a Cloud," "She Was a Phantom of Delight," "To a Skylark," "The World Is Too Much with Us"
Coleridge: Introduction, pp. 691-92—"Christobel" *or* "The Rime of the Ancient Mariner"
Byron: Introduction, pp. 721-23—from *Don Juan*
Shelley: Introduction, pp. 748-50—"To a Skylark," "Ode to the West Wind," from *Prometheus Unbound*, "The Cloud," "To Night," "Hymn to Intellectual Beauty, "Ozymandias"
Keats: Introduction, pp. 766-78
Woods, "Science, Democracy, and Industrialism," pp. 804-24
Tennyson: Introduction, pp. 825-26—"Lotus Eaters," "Ulysses," "Charge of the Light Brigade," from, *In Memoriam* or *Idylls of the Kings;* "Crossing the Bar"
Browning, Robert: Introduction, pp. 861-63—"My Last Duchess," "Home Thoughts from Abroad," "Rabbi Ben Ezra," from *The Ring and the Book*, "Prospice," "The Laboratory," "The Bishop Orders His Tomb," "Fra Lippo Lippi"
Lamb: Introduction, pp. 778-89
Hazlitt, p. 789, *or* De Quincey, p. 795

Composition Related To Literature

Research paper: 2,000-3,000 words—see Watt, *An American Rhetoric*, Chap. 12, pp. 344-80; and Cooper, *A Manual for Research Paper*
Students make critique or supplementary criticism of a few research papers.

Oral Communication Related To Literature

Panel and individual presentation of research papers to class. Assumption: Students will report from an outline rather than read the total paper.

Supplementary

Additional reading in the works listed as "Basic."

Reading in criticism, biography, history, fiction, and other literary types to prepare for research paper.

Novels of the Period—see Woods, "Romantic Novel," pp. 604-07; "Mid-Victorian Novel," pp. 814-16; and *Good Reading:* nineteenth century American, British, and continental novels, pp. 49-64.

Additional Writers in the Text—Burns, Blake, Christina and Gabriel Rosetti, Swinburne, Kipling, Carlyle, Ruskin, Arnold, and Scott; also:

Besier, Rudolph, *Barretts of Wimpole Street*—romanticized play of the Browning story

Armstrong, M., *Trelawney*—biography about the friendship of Byron, Keats, Shelley, and many other prominent people of the romantic period.

Shelley, *The Cenci* (closet play)

Trelawney, John E., *Adventures of a Younger Son*

Winwar, Frances, *Poor Splendid Wings*—deals with lives of the Pre-Raphaelites: Swinburne, the Rosettis, Millais, and Holman Hunt

Smith, Cecile Woodward, *The Reason Why*—deals with the background and characters of Tennyson's poem "Charge of the Light Brigade"

Lowell, John L., *Road to Xanadu; A Study in the Ways of Imagination*—a psychological interpretation of Coleridge's creative processes

Plays to include paper editions for Chekhov, Ibsen, and Shaw.

American short stories available in Cerf, *Great Modern Short Stories.*

Anderson, "I'm a Fool"
Buck, "The Old Demon"
Cather, "Paul's Case"
Faulkner, "Turn About"
Hemingway, "The Snows of Kilimanjaro"
Lardner, "Hair Cut"
Steinbeck, "The Red Pony"

American Poets—Crane, Dickinson, Eliot, Frost, Amy Lowell, Millay, Robinson, Sandburg, and Whitman

Fourth Quarter

CONFLICT AND CHANGE

Literature: Modern Poetry

Woods, "The Struggle on a Darkling Plain," pp. 1068-88
Carroll, pp. 1018-23
Gilbert, pp. 1023-27
Hardy, pp. 1093-1100
Housman: Introduction, p. 1101, from *A Shropshire Lad*
Yeats, pp. 1110-17
Masefield: Introduction, p. 117, "Sea Fever," "Cargoes"

Auden: Introduction, p. 1182, "Epilogue"; from *Letter to Lord Byron;* from *In Time of War;* from *The Age of Anxiety*
Spender, pp. 1194-96
Thomas, pp. 1201-04

Literature: Modern Short Story and Novel (Titles from Cerf, *Great Modern Short Stories*)
See Thrall and Hibbard, pp. 404-12.
Woolf: Introduction, pp. 1122-23, from *The Waves*
Joyce: Introduction, pp. 1128-29, from *Ulysses*
Lawrence: Introduction, 1146-47; "Prussian Officer," "The Lovely Lady"
Mansfield: Introduction, p. 1155, "Miss Brill," "Marriage á La Mode"
Huxley: Introduction, p. 1160, "Young Archimedes"
Maugham, "The Letter"
Conrad, "Heart of Darkness"
Galsworthy, "Apple Tree"

Composition Related to Literature
Paraphrase, synopsis, and précis
Original poems and short stories
Book reviews: See Wagenknecht, *A Preface to Literature,* p. 336
Reappraisal of the modern literary magazine
Essays on problems of aesthetics, art and propaganda, and on the relationship of the arts. (See Wagenknecht, *A Preface to Literature* —Example: What Is Beauty? Where Does Propaganda Become Prophecy?
Analysis of a short story *structurally* in its five divisions, (See Thrall and Hibbard, p. 410): (1) The situation, (2) The generating circumstance, (3) The rising action, (4) The climax, and (5) The dénouement

Oral Communication Related To Literature
Read poetry aloud
Oral interpretation of the writing of any good author
Class *listens* for style
Class discussion on the novel and short story

Supplementary
Additional reading in works listed as "Basic."
Novels of the Period—see Woods, "Wastelanders and Truth Seekers, pp. 1079-88; and *Good Reading* for twentieth century American, British, and continental novels, pp. 65-88
A Study of the Novel—(Wagenknecht, *Calvalcade of the English Novel* is particularly helpful.) Suggestions for class study:
Austen, *Pride and Prejudice*
Bennett, *Old Wives' Tale*
Bronte, C., *Jane Eyre*
Bronte, E., *Wuthering Heights*

Butler, *Way of All Flesh*
Dickens, *Oliver Twist; Pickwick Papers*
Fielding, *Joseph Andrews*
Hardy, *Tess of the D'Urbervilles; Mayor of Casterbridge*
Hawthorne, *Scarlet Letter*
Llewelyn, *How Green Was My Valley*
Melville, *Moby Dick*
Paton, *Cry, the Beloved Country*
Thackeray, *Henry Esmond; Vanity Fair*
Twain, *The Gilded Age*

OAK PARK AND RIVER FOREST HIGH SCHOOL, Oak Park, Illinois
Kenneth W. Lund, Superintendent

The special advanced course is a correlation of reading, writing, and thinking—both logical and philosophical. The type of course offered is shown in these statements from the course of study:

As a reading course—"Evaluation of a piece of literature in respect to its aesthetic qualities, its selective and critical reflection of human experience, its essential truth."

As a writing course—"Writing with purpose, accuracy, simplicity, and directness." (Twenty-five themes, most of them 1,000 to 2,000 words, were written as outside assignments; twelve impromptus were written. Most themes were expository and analytical, both in the sense of "thinking logically and coherently within a given field of reference, distinguishing between fact and opinion" and in the sense of evaluating a piece of literature. Other themes called for an imaginative approach, for sense impressions, though none were purely "creative.")

As a humanities course—"Development of better informed and more honest attitudes towards one's physical environment; towards his fellows in human society; towards the past as he evaluates it in the process of discovery; towards the future as he sees himself in relation to his personal world, the moral purpose of his life, and his moral obligations to others."

Class time is 3 1/3 clock hours per week. Home preparation varies with the proportion of writing to reading; with the amount of voluntary reading; with the individual student. Seven hours is probably the minimum; fourteen hours the maximum reported.

Texts:
Altick: *Preface to Critical Reading*
Hayford and Vincent: *Reader and Writer*
Perrin and Smith: *Handbook of Current English*

Literature:
Cerf: *Great Modern Short Stories*
Hemingway: *The Old Man and the Sea*
Hersey: *A Single Pebble*

Steinbeck: *The Pearl*
Housman: *The Collected Poems*
Chekhov: *The Cherry Orchard*
Ibsen: *The Wild Duck*
Shakespeare: *King Lear*
Sophocles: *Oedipus Rex*
Maugham: *Of Human Bondage*
Paton: *Cry, the Beloved Country*

Collateral Reading required of every student:

Buck: *The Good Earth*
Hardy: *The Return of the Native*
Rolvaag: *Giants in the Earth*
Saint Exupéry: *Wind, Sand, and Stars*

Further supplementary reading is individual in choice and amount.

FRENCH

CEEB's Suggested Syllabus

THE objectives recommended for an advanced course in French in the secondary school are knowledge of the language, and knowledge of the literature and culture.

Knowledge of the language should include the following abilities: to understand what an educated native French speaker says when he is speaking at normal speed on a subject not unduly specialized; to speak with an acceptable pronunciation and with a command of vocabularly and syntax sufficient for sustained conversation on a general subject; to write clearly and with correctness in vocabularly, idiom, and syntax, and to compose an informal but well-ordered narration, description, or essay; and to read and comprehend at sight prose and verse of moderate difficulty and mature content and, with the aid of dictionaries and reference books, to comprehend any material within the range of the student's general knowledge.

Knowledge of the literature and culture involves an acquaintance with representative works significant for their content and literary values and the ability to read with understanding and appreciation. The student should be able to comprehend the situations, emotions, ideas, and implications of works which might be read in a college course in literature and to relate such works to their historical and cultural setting. In doing so, he should be aware of the distinctive contributions of France to Western civilization and of the principal resemblances and differences between French patterns of life and thought and our own.

Course

It is recommended that able students who have done outstanding work for three years in the secondary school, as well as those who by other means have reached a comparable level of achievement be considered for

an advanced course of study in their senior year. The advanced course will be more effective if students can be selected on a preliminary basis in the second and third year and given guidance in special work.

In planning the advanced course, the secondary-school teacher must have some freedom in selecting objectives and be encouraged to utilize his individual resources, talents, and imagination.

Examination

Since colleges and universities vary widely in the emphasis given in different courses to the different objectives of language study, the advanced examination is designed to provide information about the quality of a student's attainment in each of these respects. Colleges generally will expect some competence both in knowledge of the language and in knowledge of the literature and culture, and an outstanding and mature performance in one. In addition to test scores, colleges will receive a report from the schools on the advanced course which an applicant has taken. This will include the following information: the time devoted to the course, the relative emphasis on the objectives, some indication of the methods pursued, and a complete list of the works read by the applicant. College departments are urged to examine the whole paper for themselves; the answers to individual questions give a much clearer picture of a student's powers than any numerical grade.

The Advanced Placement Examination in French is three hours in length. Candidates may consult freely the *Petit Larousse* or a French-English, English-French dictionary of the scope and quality of Mansion's *Shorter French and English Dictionary* (Boston: D. C. Heath and Co.) or the *Concise Oxford French Dictionary* (New York: Oxford University Press). Candidates should take their own dictionaries to the examination.

Questions vary in form and type from year to year, but all are directed to testing one or more of the areas or sub-areas described in the first three paragraphs of this section on French.

About one hour is devoted to the candidate's language profile and involves a combination of several of the following areas: (1) listening comprehension, (2) speaking ability, (3) reading comprehension, (4) composition in French, (5) translation to English.[1]

About one hour is devoted to sampling the student's familiarity with the works he has read and his awareness of their place in the development of main currents. The proper use of options in this portion of the examination allows for diversity in the students' reading background, yet adheres to desirable standards of scope and quality.

About one hour is used to test the student's ability to come closely to grips with the form and content of a work of literary art.

[1] It is recognized that translation to English may be a useful testing device. The committee does not favor it as a teaching device, especially in the first two years of language study.

ADAPTED SYLLABUSES

NEWTON HIGH SCHOOL, Newton, Massachusetts
Harold Howe II, Principal

We start the advanced program in the second year of French for those pupils who have had Latin in the ninth grade and started French in the high school in the tenth grade. Also in the third year of French, a course is provided for those pupils who started French in the ninth grade and have had no other language.

In this junior year in high school our goal is to cover thoroughly all verbs, all points of grammar, build in vocabulary and idioms so that they are well-grounded to start the senior year in literature and composition. The work is conducted in French except for presentation of grammar. We have not bought special texts for this class but have left it to the skill of the teacher to use our regular texts and extend the work challenging the gifted pupil. Attention is given to resumé, reading, translation, questions and answers, memory work, and fables.

Senior Year, the two classes are combined and the work done is the equivalent of the first-year college course. Classes are conducted in French with the exception of poetic explanations and interpretations. There are frequent (once a week) free compositions in class, with additional longer papers in French done at home. There are also papers in English on more literary subjects—book reports and analyses of poetic selections from the authors. Students are required to do much collarteral reading. Class time is four hours per week with five to six hours of home preparation.

GAMALIEL BRADFORD SENIOR HIGH SCHOOL, Wellesley Hills, Massachusetts
Samuel M. Graves, Principal

I. *Texts*

Grammar—Bovee and Carnahan, *New French Review Grammar,* Boston, D. C. Heath and Co.

Reading—Anthologies— (For single works in addition to the anthologies, see III below)

McNulty and Lombardi, *Ecrivains, Modernes,* Boston, D. C. Heath and Company, 1947.

Schinz, Robert and Giroud, *Nouvelle Anthologie Francaise,* revised edition, New York, Harcourt, Brace and Company, 1943.

Steinhauer and Walter, *Omnibus of French Literature,* Vol. II, New York, Macmillan Company, 1941.

II. *Records—Anthology of Nineteenth Century French Poetry; Andromaque; Le Cid*

III. *Authors and Works Read*— (The asterick on the author's name or a title indicates intensive reading. Otherwise the work is read collaterally.)

Balzac, *Le Colonel Chabert*•, *Eugenie Grandet*, and *Le Pere Goriot*
Baudelaire•, Selected poems
Beaumarchais, *Le Barbier de Seville*, and *Le Mariage de Figaro*
Bourget, Selected pages
Chateaubriand, *Atala*
Corneille,• *Le Cid*
Flaubert,• *Madame Bovary*
Hugo, *Notre-Dame de Paris; La Preface de Cromwell;*• *Ruy Blas,*• Selected poems•
Lamartine•, Selected poems
Mallarme•, Selected poems
Mauriac•, Selected pages
Moliere, *Le Bourgeois Gentilhomme*, and *Le Tartuffe*•
Musset•, Selected poems
Racine•, *Andromaque*
Rimbaud•, Selected poems
Rousseau•, Selections from *Les Confessions* and *Emile*
Vigny•, Selected poems
Stendhal, *Le Rouge et le Noir*
Voltaire•, *Zadig*

IV. *Objectives*

Grammar—Students are expected to master all the material in their textbook.

Reading—The aim is to develop the ability to read the assigned works with moderate speed and accurate comprehension.

Written Self-Expression—The ability to write with reasonable accuracy about literary subjects is required.

Aural-Oral Skills—In order to succeed in the course, a student must be able to understand French spoken at a moderate speed and dealing with a subject with which he or she has some familiarity. In addition, the student must be able to express himself orally with some accuracy (in grammar, idiomatic constructions, and pronunciation) and without undue hesitation.

Literature—It is the purpose of the course to help the learner to think clearly and critically, to analyze literary masterpieces from the point of view of thought and structure, to see the relation of these masterpieces to the period and the environment in which they were born, and to understand the relation between content and form.

V. *Teaching Method*

Grammar—The method is conventional, consisting of explanations of grammatical points and the translation of sentences from English to French. However, the explanations and the discussion of errors and corrections are in French.

Reading

Intensive—At the beginning of the year, students are held responsible for an accurate translation of assignments in prose. After two months, translation is completely dispensed with, except as a means of clarifying an obscure passage which cannot be clarified otherwise.

Extensive—This is the collateral reading done independently by the students outside of class.

Written Self-Expression—This consists of critiques and other forms of analytical writing based upon the collateral reading. Careful analysis and grading are followed by a discussion of the papers individually or collectively in order to point out flaws and to furnish examples of good writing.

Aural-Oral Skills—Through answers to the questions based on the text, and through informal discussions of problems raised by the author, students have the opportunity to develop skill in oral self-expression. In addition, using a given masterpiece as a starting point, the teacher speaks to the class about the life of an author; his historical, social, and intellectual milieu; and the relation of his work to his period. Dictation and listening to records of some of the masterpieces already studied are other means of training the students to understand the spoken language.

VI. *Total Time per Week Devoted To French*—Students in the Advanced Placement Program meet five fifty-one-minute periods per week over a two-year period. In French III, they spend one and one-half hours per day for regular preparations and an average of four hours per week for the writing of papers.

CENTRAL HIGH SCHOOL, Philadelphia, Pennsylvania
Gerhard Angermann, Director

9A-B—DeSauze: *Nouveau Cours Pratique de Francais*

10A —Fraser, Squair, and Coleman: *New Complete French Grammar,*
Sixty pages of selected reading—Bible, Chateaubriand, Hugo, Gude, magazines and papers, *etc.*
About a dozen irregular verbs.

10B —A. France: *Le Livre De Mon Ami*
Comfort: *Practical French Composition,* ch. 1-10 incl.
The irregular verbs
Additional mimeographed reading material
Free composition based upon reading.

11A —Daudet: *Tartarin de Tarascon*
Olmstead and Barton: *French Composition,* ch. 1-8 incl.
Fauchois: *Prenex Garde a la Peinture*
Denoeu: *L'Heritage Francais,* pp. 1-61

Denoeu: *Petit Miroir de la Civilization Francaise*, sect. 2
Review of irregular verbs
Free composition based upon reading

11B —Sandeau: *Mademoiselle de la Seigliere*
DeMaupassant: two stories
Selection, Avril 1957
Hooke and Miller: *French Review Grammar, ch.* 13-15 incl.
Denoeu: *L'Heritage Francais*, pp. 62-99
Denoeu: *Petit Miroir*, sections 3, 4, (5).
Review of irregular verbs
Free composition based upon reading

12A —Deval: *Tovarich*
Moliere: *Le Bourgeois Gentilhomme*
Mimeographed reference material
Denoeu: *L'Heritage Francais*, pp. 100-203
Denoeu: *Petit Miroir*, sections (5), 6, 7,
Papers based upon reading
Hooke and Miller: *French Review Grammar*, ch. 16, 17, 18

12B —Corneille: *Le Cid*
Anthologie de Poemes (Thrift Press), Charles d'Orleans a Verlaine
Penguin Book of French Verse XIX Siecle, "Hugo a Malarme," *etc.*
Rostand: *Cyrano de Bergerac*
Hooke and Miller: *French Review Grammar*, ch. 19, 21, 21
Mimeographed reference material
Papers in French, based upon reading

Instruction is by the eclectic method. As noted, grammar and composition, formal and free, are studied and practiced throughout the four years. Five periods of three quarters of an hour each comprise the weekly roster. Extensive home preparation is required. The emphasis throughout is upon quality.

GERMAN

CEEB's Suggested Syllabus

THIS program is designed to encourage superior students in secondary schools to develop a high degree of proficiency in German on either of two levels: *Intermediate German or Advanced German.*

In Intermediate German (college level), the student is expected to do outstanding work in a specially designed and supervised course of study which is more advanced than normal third-year work in secondary schools and which will carry the student beyond the traditional two-year college program.

Advanced German (college level): Introduction to German Literature, is self-descriptive. A fourth-year course of study in secondary school is generally required to develop competence, which should be comparable to that of a third-year college course. However, the level and degree of achievement are the basic criteria; the time required may vary in individual instances.

Most colleges are granting advanced placement for demonstration of competence in Intermediate German, and the number of colleges granting both credit and advanced placement on this level is increasing. An examination in Advanced German: Introduction to German Literature, was offered for the first time in 1957 under the name German 4. Most students who demonstrated competence at this level were granted advanced placement *and* credit, or credit alone, if they did not continue the subject.

INTERMEDIATE GERMAN *(College Level)*

The basic aims of an Intermediate German course of study should be proficiency in listening, reading, speaking, and writing. These aims may be defined as the ability to understand German spoken in connected discourse, to read German prose and poetry of moderate difficulty, to express everyday experiences in conversational German, and to write German with reasonable ease and accuracy.

Course

An Intermediate German course of study should consist of readings in relatively modern materials, both literary and nonliterary, which are good examples of German writing and at the same time provide insight into German life and thought. Collections of short stories, plays, poems, and essays should be included. Representative authors such as Hesse, Kästner, Keller, Thomas Mann, Remarque, Schnitzler, and Zuckmayer may be read. It should be clearly understood, however, that these names serve *only as a guide to a certain level of achievement in mature reading,* that students are not expected to read a work by each author, and that

certain writings by these authors are probably beyond the capacities of even the most gifted secondary-school students at this level.

Examination

The three-hour examination does not concern itself with the testing of the content of any specific books, nor does it necessarily include material taken from any of the above-mentioned authors. Rather, it seeks to test the candidate's general language proficiency and, to a limited extent, evaluate his skill in literary interpretation. Reading comprehension will comprise approximately one half of the examination, listening comprehension one fourth, and writing one fourth. Speaking ability will not be tested. However, individual colleges may require candidates to demonstrate their proficiency in this area.

Reading Comprehension

Candidates will be expected to read passages from literary and nonliterary German and to demonstrate their understanding of these selections by answering questions in English or German. They will also be required to demonstrate their knowledge of idiomatic and grammatical points through the translation of selected words and phrases in the context of a short passage.

Listening Comprehension

The examination will test the student's ability to understand both short sentences and connected passages of moderate length.

Writing

The student may be asked to write a German conversation based upon an outline.

ADVANCED GERMAN *(College Level)*

Introduction To German Literature

The basic aim of an Advanced German course of study is to develop a capacity for literary interpretation and critical analysis of representative works by major German writers. The student should consider these as works of art (from the point of view of style, techniques, and aesthetic quality) and as documents of the time in which they were written, keeping in mind the ethical and social issues which may be involved. The student should also develop reasonable facility both in following connected German discussions and in setting down his own ideas in German.

Course

Students should acquaint themselves with a variety of works by major German writers of the eighteenth, nineteenth, and twentieth centuries. In doing this, they should seek to develop a capacity for literary interpretation and critical judgment rather than mere reading comprehension or the accumulation of factual information.

Although Advanced German at this level is not yet widely offered in secondary schools, this particular course of study has met with universally enthusiastic response from the colleges, and as many candidates are currently presenting themselves at this level as did originally at the intermediate level. Since many schools may not be in a position to present candidates at this level each year, it is quite appropriate to nominate one or more students at irregular intervals.

Examination

Most of the examination is devoted to literary interpretation, but it also includes aural comprehension and composition. In preparation for the examination, students should familiarize themselves with representative works of *six* major German writers to be selected from the following list: Lessing, Goethe, Schiller, Eichendorff, Kleist, Heine, Keller, Storm, Rilke, and Thomas Mann. Authors are suggested rather than specific works in order to permit flexibility. Teachers should feel free and be encouraged to go beyond this list at any point and in whatever direction they may deem appropriate. In the interest of setting up standard criteria around which to develop a suitable examination, it has been necessary to limit the material to be tested to the above list of authors.

Literary interpretation

The student is given representative passages by several of the authors he has studied in preparation for this examination and asked to establish, in short essays in English, a meaningful relationship between the passages and the insights which he has gained from the study of the author of each passage.

Aural Comprehension

In a simulated lecture situation, the student may be asked to take notes, in English or German, on a recorded discussion in German.

Composition

The student may be expected to express himself in German on a literary topic.

Basic changes at either the intermediate or the advanced level will not be made without appropriate announcement. Future examinations may, however, deviate from the types of examination questions outlined above within the limitations prescribed by the aims and course descriptions for each level.

LATIN

CEEB's Suggested Syllabus

THE aims and contents of advanced secondary-school Latin courses, which are outlined below as Latin 4 and Latin 5, are in general conformity with those of corresponding courses taught in the freshman year in American colleges and universities. Although the course contents are rather specifically stated as an aid to teachers planning such courses, it should be emphasized that the primary aim is to develop the advanced student's ability to a level of proficiency comparable with that of the college freshman. As in all courses in Latin beyond the elementary level, the basic requirement is progress in the ability to read, understand, and interpret Latin literature in the original language.

The appreciation of Latin literature calls for an understanding of how Latin writers obtain their effects. Analysis and study of style, with recognition of rhetorical devices, will accordingly be an integral part of the advanced work on both the Latin 4 level and the Latin 5 level.

Advanced courses should also include: (1) the development of some familiarity with Roman life as revealed in Roman literature, and (2) the cultivation of an awareness of classical influence upon later literature.

LATIN 4

Course

For one semester's college credit in Latin a fourth-year enriched school course covering the reading in Latin of at least five of the first six books of the *Aeneid* is required. This course is viewed as including, in addition to the ability to translate, some appreciation of the *Aeneid* as poetry, ability to read aloud and scan Latin hexameter verse, a knowledge of the contents of the remainder of the *Aeneid*, study of the ancient epic as a literary genre, and some acquaintance with Roman social, political, and literary history.

Examination

The examination includes sight passages for translation, passages which may be presumed to be familiar for translation and interpretation, scansion, and essay questions. Its exact content and form will of course vary from year to year.

LATIN 5

Course

For two semesters' of college credit in Latin, the requirement, beyond a course in Vergil (which need not be an advanced course as described for Latin 4 above), is work at the fifth-year level, including reading of any two of the following: (1) a substantial amount of prose drawn from the philosophical works of Cicero, the writings of Livy, or the minor works of Tacitus, (2) at least one Roman comedy, but preferably one

of Plautus and Terence, (3) a substantial amount of the lyric poetry of Catullus and Horace. Scansion of the following characteristic meters is expected: Alcaic, Sapphic, Iambic, Hendecasyllabic, Elegiac Distich.

Examination

The examination includes sight translation, detailed criticism and interpretation, essay questions of a general literary and historical nature, and scansion as indicated above.

ADAPTED SYLLABUSES

CLASSICAL HIGH SCHOOL, Springfield, Massachusetts
Joseph N. Rodeheaver, Principal

I. Unit of Mythology
Basic text book—Edith Hamilton, *Mythology*
A. Oral and written reports; class discussion
B. Use of illustrative material borrowed from City Library (pictures, opera records)

II. Lives and works of Virgil, Horace, Ovid, Catullus
A. Outlines presented in 2 class lectures
B. Reading, discussion, reports

III. Versification
A. Technical information about
1. Dactylic hexameter
2. The elegiac stanza
B. Written practice in dividing these verses
C. Oral practice in reading with both rhythm and expression

IV. *The Odyssey*
A. An English translation read and discussed
B. Comments on episodes occurring in both the *Aeneid* and the *Odyssey*

V. *The Aeneid*
A. Books I, II, III, IV, VI translated and discussed
B. Portions of Books, V, VII, VIII read at sight
C. Contents of Books IX–XII read in an English summary
D. Critical study of the epic as a whole

VI. Ovid
Portions of *Metamorphoses, Heroides, Fasti* read in class at sight
About 400-500 lines

VII. Catullus and Horace
A few selected poems translated and discussed

VIII. Vocabulary Building, both in Latin and English

An effort is made to correlate the material in VI and VII with reading in English 12s, an enriched course. For instance, when the Greek tragedies are studied in English, we read *Iphigenia* from Ovid's *Ex Ponto*.

ST. LOUIS UNIVERSITY HIGH SCHOOL, St. Louis, Missouri
The Reverend Gerald R. Sheehan, Principal

Advanced Latin IV—program as outlined on page 59 of *Advanced Placement Program* booklet, p. 59. Copyright 1956.

Texts—Henle, *Fourth Year Latin*, Loyola University Press, Chicago; Books I-IV Knapp, *Vergil's Aeneid*, Scott, Foresman and Co., 1928; for Bks. VII-XII

Readings—During second, third, and fourth quarters.

Henle: Books I to VI, selections totaling 1,537 lines; studied thoroughly

Knapp: Books VII to XII, selections totaling 1,148 lines; studied not quite as thoroughly as those of the first six books. Total: 2,685 lines.

Time—Classes meet three days a week during the second quarter for 45 minutes each.

During third and fourth quarters, classes meet five times a week for 45 minutes each class.

Home Study—Probably averages 45 minutes to one hours of study for each class recitation as the students have to be able to translate the text without hesitation. All are responsible for all the text for each class.

Type of Class, seminar. Students are seated around a long table. Free discussion is encouraged. Various faculty members are invited in as well as teachers from other schools. These join the discussions and are free to question students and bring up subjects that they might wish discussed. Topics for discussion are selected from time to time in addition to those that arise spontaneously during the course of the seminar. These deal with topics such as the following:

(a) Vergil's Debt to Homer—This is particularly apt when students are taking Homer in their Greek class (Schoder's Greek texts).

(b) Books II and IV as Tragedies, using Aristotle's criteria. This fits in well with their work in Shakespeare, and during the fourth quarter with their work in their Greek class where they read (in translation) and discuss selected plays of Aeschylus, Sophocles, and Euripides.

(c) Aeneas as a puppet of the gods

(d) Roman Religion as pictured in Vergil

(e) Motives in writing the Aeneid: Augustus' reforms and others of a like nature

Vocabulary—a total of 400 words from Books I to VI were taken for master.

Background—All references to mythology are carefully explained and learned. Correlations with other epics are discussed such as Dante's

Divine Comedy. Commentaries such as Knight's *Virgil's Troy* are studied carefully.

Papers—One lengthy paper, entitled Dido's Sanity, using the text as a basis for argument *pro* or *con*.

Supplementary Reading—Sellar: *Virgil;* Conway: *The Vergilian Age;* and Haecker: *Virgil, Father of the West;* and pertinent parts from: Lockwood: *Survey of Classical Latin Literature;* Mackail: *Latin Literature;* Duff: *Literary History of Rome;* Mackail: *The Aeneid* (Introduction in text edition); Prescott: *Development of Vergil's Art; and* Mackail: *Vergil and His Meaning to the World Today.*

SPANISH

CEEB's Suggested Syllabus

TO BE admitted to an enriched curriculum of Spanish studies at the secondary-school level, the student should have a basic knowledge of the language and culture of the Spanish-speaking peoples. In the advanced course he should attain a high degree of proficiency in the areas of listening comprehension, speaking, writing, reading, and literary analysis. As a candidate for advanced placement in college, he will be expected to have the ability to understand spoken Spanish in connected discourse, to express himself with reasonable ease and fluency in conversational Spanish, and to write freely and accurately on subjects that fall within the range of his experience. The advanced student should also be able to read modern Spanish of moderate difficulty without the aid of a dictionary, and, using a dictionary, to read any given selection from classical or modern Spanish. He should be prepared to understand and appreciate varied aspects of literary expression, such as style, imagery, and structure.

Course

To be eligible for advanced placement and credit in college the student is expected to have completed the equivalent of work required in a one-year college course in the introduction to literature which covers selected works from literatures of Spain and Spanish America. The function of such a course in the advanced school program, as well as in college, is to direct the student toward appreciation of content and perception of literary values. It is *not* conceived as a survey course of the entire field of either Spanish or Spanish-American literature. It is, however, recommended that representative readings be selected from several different genres (novel, essay, short story, drama, lyric poetry). Although no specific minimum requirements are set up, because of the variety of texts and methods, it is suggested that the intensive study of six to eight titles, plus selected poetry, might afford adequate coverage. It is further

suggested that not less than one quarter and not more than one half of the materials read be of Spanish-American origin.

Examination

The student's ability to speak Spanish may be tested by personal interview at the college he plans to enter. His ability to understand spoken Spanish is tested in a half-hour section of the advanced examination which is administered by tape recorder. His ability to read Spanish and to discuss and interpret it, his ability to translate into idiomatic English, and his ability to express himself in written Spanish is tested in a two and one-half hour section of the examination by means of objective questions, short-answer questions, or essay questions. Some questions will require answers in English, but in at least one question the student is asked to write an essay in Spanish. During the examination the student is permitted to use a dictionary of his choice which he himself provides.

The following questions are typical of those that might be included in the examination.

Listening comprehension

The student hears and takes notes on a 15-minute lecture recorded on tape. The subject of the lecture is either cultural or literary and deals with Spain or Spanish America or both. The student then is asked to write a brief summary of the lecture based on his notes. Both the notes and the summary, which may be written in either English or Spanish, is used to evaluate the student's ability to comprehend oral Spanish.

ADVANCED SYLLABUSES

Santa Barbara High School, Santa Barbara, California
C. H. Hardesty, Principal

Texts:

Aurelia Espinosa	*Spanish Review Grammar and Composition*
Starnes and Van Scoy	*Que Quiere Decir* and *Spanish Verb in Idioms*
Ugarte	*Espana y Su Civilizacion*
Robert Nassi	Reviewing Spanish Three Years, with College Board examinations

Supplementary Literature

Marmol:	*Amalia*
Sierra:	*Cancion de Cuna*
Sierra:	*Sueno de una Noche de Agosto*

Learning experiences

Practice in developing correct language habits aimed toward greater fluency of expression is achieved through dictation, retold stories, original compositions, oral and written reports, letter writing, panel discussions, debates, dramatization, and selected poetry poems. A weekly composi-

tion is required. These are carefully corrected and returned for revision. In this way each individual overcomes his mistakes and gains confidence in expressing himself correctly.

CENTRAL HIGH SCHOOL, Philadelphia, Pennsylvania
Gerhard Angermann, Director

Spanish

The following texts are used in the Spanish classes for Advanced Placement:

Lopez Luna—*El Gaucho Smith*
Crawford—*Temas Españoles*
Alarcon—*Novelas Cortas Escogidas*
Seymour, Carnahan, and Hespelt—*Alternate Spanish Review Grammar*
Ugarte—*España y Su Civilizacioń*
Valera—*Pepita Jimenez*
Kasten and Neale-Silva: *Lecturas Amenas* (Anthology)
Valdés—*José*
Baroja—*Zalacaín El Aventurero*
Sierra—*Sueño de Una Noche de Agosto*
Alarcon—Sombrero *de Tres Picos*
Camba, Taboado, *Estremera, Ibañez,* and *Valdés, Short Stories*
Bécquer, Campoamor, Nervo, and Machado, *Selected Poems*

These students have followed a special advanced course which includes a greater number of texts than is usually required in the fourth year of Spanish. By the fourth year, the students are expected to have a firm foundation in the mechanics of grammar and syntax. The use of Spanish in the classroom is almost complete. The reading assignments are always discussed in the foreign language. Emphasis is placed not only upon plot, but also upon the literary value of the particular work.

Each week the student is required to write in class a composition in Spanish. These papers are based upon the readings. This technique is used in order to increase the student's ability to write accurately in the foreign language. It also serves as a springboard for the review of grammar. Grammar is also reviewed by the utilization of a review grammar book with composition from English into Spanish. In order to increase the students' appreciation of the literature, a complete history of Spanish civilization is presented. Spanish contributions in other fields such as art and music are included. Collateral reading is twofold:

1. Short stories and plays written in Spanish
2. Books in English dealing with aspects of Spanish life; *e.g.,* Morton's *A Stranger in Spain,* and Hemingway's *The Sun Also Rises.*

EXAMPLE OF FORMS USED
BETHESDA-CHEVY CHASE SENIOR HIGH SCHOOL

William G. Pyles, *Principal*

APPLICATION FOR CONSIDERATION IN THE RAPID LEARNER PROGRAM

NAME _____ Senior High-School Area _____

I should like to be considered for the rapid-learner program in English, mathematics, science. (Underscore which subject areas.)

My grades in major subjects for the 9th grade are

English _____ Algebra _____ Latin _____

Civics _____ French _____ Science _____

My California Tests are

Reading Vocabulary _____

Reading Comprehension _____

Language Mechanics _____

Spelling _____

Arithmetic Reasoning _____

Arithmetic Fundamentals _____

My activities in 9th grade are (Describe in some detail.)

_____

_____

_____

_____

My outside activities are

_____

_____

I am aware of the requirement of maintaining a grade of "B" in order to remain in the program. _____

Approved: _____

Not approved: _____ _____

Signature of Pupil

_____

Signature of Counselor

_____

Signature of Parent

SELECTION LETTER TO PARENTS

BETHESDA-CHEVY CHASE SENIOR HIGH SCHOOL

Bethesda 14, Maryland

Date_____

To the Parent of_____:

_____has been selected by the faculty for assignment to a rapid learners' class in

_____Biology 1
_____Biology 2
_____Chemistry
_____Physics
_____Advanced Physical Science
_____English 3
_____English 4
_____Algebra 2
_____Plane Geometry
_____Trigonometry and Solid Geometry

The members of this class will be expected to deepen their understandings and skills in the field. Standards for achievement will be kept high. Students who do not maintain a B grade or better in any six-week marking period will be transferred to a regular class.

The challenge to the students in such classes may prepare them for advanced work in college. Our faculty expects to present this material in such a way that unusual tensions in the preparation and work of the students will be avoided.

It is necessary for us to have your consent to this assignment before we can schedule classes. Please indicate your approval by signing this form and returning it to me not later than_____. If it is not received, he will be assigned to regular classes. Please keep the carbon copy of this letter for your record.

Sincerely yours,

_____
Vice Principal

Date_____

_____has my approval for placement in the class noted above.

_____
Parent Signature

WITHDRAWAL FROM

BETHESDA-CHEVY CHASE SENIOR HIGH SCHOOL

Bethesda 14, Maryland

Date_____

_____ is enrolled in the rapid learner class in _____. It was understood that a grade of "B" must be maintained to remain in this class. The "B" grade was not earned in the first marking period. The teacher believes, however, that it would be profitable for him/her to remain in the class for another grading period. If the grades does not improve to meet the "B" requirement, it will be necessary to make the change to a regular college preparatory class after the second report.

Sincerely yours,

_____

Vice Principal

B-CC ADVANCED PLACEMENT FOLLOW-UP STUDY

Name _____ _____

Last First Junior High School Attended

College attended _____

SUBJECT	*9*	*10*	*11*	*12*	*College Placement*
English					
Mathematics					
Science					
Other					

TEST RESULTS

I.Q.

- Total
- Language
- Non-Language

READING

- Comprehension
- Vocabulary

LANGUAGE SKILLS

MATHEMATICS

- Reasoning
- Fundamentals

COLLEGE ENTRANCE EXAMINATION BOARD:

- Verbal
- Math
- Achievements
- Advanced Placements

KEY

E indicates enrolled

Grade plus date indicates grade at withdrawal

Grade only indicates completion of course

Comments (dated and signed) on other side

Scientific Criticism Aids Education

WILLIAM H. BURTON

THE following statement is from an address, "Education in the Light of the Satellites," given by Dr. Joel Hildebrand, emeritus professor of chemistry, one time Dean of Liberal Arts at the University of California, and one time president of the American Chemical Society. The quotation appeared in *Time Magazine*, November 25, 1957, page 99. *Time* asked that we do not quote from their columns but from the address itself. He said: "The superintendent of schools in a large city (Washington, D. C.) puts this into practice by assigning his teachers to subjects they have never studied, because, he says, he wants his teachers to be child-centered, not subject-centered.

The statement seems to refer to a situation so bizarre that it would not be taken seriously. Prof. Hildebrand repeats it and defends it as a typical illustration of how far the schools have gone in "teaching boys and girls, not subjects." Asked for the source of the statement, Prof. Hildebrand said: "I had the information independently from two responsible persons, one of whom, incredulous, had checked it with the superintendent himself. He is, of course, now free, in the light of Sputnik to deny it."

Prof. Hildebrand does not present the qualifications of his informants which would make them, in legal terms, competent and credible witnesses. He does not explain when the checking was done, with which superintendent, and under what conditions. Prof. Hildebrand does not explain why he did not himself check upon such a remarkable statement, directly with the superintendent of schools in Washington, D. C.

An independent check brought a prompt, courteous, and unequivocal reply from Superintendent Carl F. Hansen: "This, on the face of it, would be an unreasonable procedure. Our philosophy has been that teachers should have adequate preparation in their fields of instruction, as well as in the methodology of teaching. In fact the school system has recently been re-emphasizing the importance of general preparation for teaching, and has reduced the number of education credits required in the elementary schools from 40 to 24, and in the secondary schools from 24 to 18. . . . Misunderstanding may have arisen . . . because of the shortage of teachers of mathematics (we had) to assign teachers to classes in this field outside their major preparation. This was pointed up here as

William H. Burton, Retired; was Director of Apprenticeship, Harvard Graduate School of Education, Cambridge; now located at 3512 Willamette Avenue, Corvallis, Oregon.

one of the evidences of teacher shortage . . . and certainly is not a condition which we favor."

A second inquiry was sent because reference to the two persons "who had checked with the superintendent himself" was inadvertently omitted from the first inquiry. Again Dr. Hansen, taking the time to investigate, reports: ". . . so far as we have determined in this office no one in the school system has ever followed the practice of assigning teachers to fields for which they are not prepared in order to keep the teacher 'child-centered.' We have run a double check to find out if anyone of the staff officers or anyone on the staff of the Teachers College talked to Dr. Hildebrand on this subject. The report I have from this investigation: 'Nobody will admit talking with Dr. Hildebrand,—or on this subject.' . . . The charge is, on its face, absurd."

Asked what his documentation was for the "child centered" practice in American schools, Prof. Hildebrand cited two references:

Tales of a Teacher by Beatrice S. Nathan (Regnery, 1956).
The High School for Today by Harold Spears (American Book Company, 1950).

Prof. Hildebrand does not explain why he accepts as a primary source the personalized stories of one person. The book by Spears explains, as does every standard text in print, the usefulness of knowing children's interests and learning processes, together with the necessity of knowing content. One half of a sentence toward the end of the book could be misunderstood as advocating excessive emphasis on the child. The book nowhere advocates appointing teachers on the child-centered basis alone. Dr. Spears as superintendent of San Francisco schools just recently announced increased emphasis on subject matter preparation for teachers.

Prof. Hildebrand does not explain why he did not check more sources than the two given.

1. Sixteen prominent books on curriculum development make no reference to employing teachers without regard to subject matter competence. Fourteen of the books do not carry "child-centered curriculum" in the index. One devoted a page, and another four pages, to a factual description of child and subject as possible centers of organization.

2. Six most widely used books on principles of teaching develop adequately both content and child development. None advocates placing teachers on a child-centered basis.

3. Fifteen books on supervision of instruction do not advocate child-centered placement of teachers.

4. Six books on various aspects of administration, organization of schools, introduction to education do not advocate the practice under discussion.

Prof. Hildebrand's address (and other addresses by him) contain many quotations from individual teachers. He does not explain why he accepts statements of this type. An equal number of individual statements can be gathered flatly contradicting the first set. Any point can be "proved" or "disproved" by collecting individual statements.

Remarks ridiculing "units of instruction" are included in the address. A teacher is quoted as calling them "eunuchs of education" because "they don't produce anything." Advised that units properly used in areas where they are applicable produce better results than more formal methods, and that a number of valid comparative studies were available showing this, Prof. Hildebrand replied: "I shall not hesitate to criticize "units" of pseudo-science, even though the unit organization is shown to be superior by 225 studies." The term "pseudo-science" did not appear in the original statement. Prof. Hildebrand does not explain why he will ignore comparative studies done under controlled conditions.

At this point two pages or more could be filled with criticisms of education made by Prof. Hildebrand, plus reference to sources which he did not consult. It was suggested to him that many good teachers had left the profession because of the severe, unfair criticisms such as Prof. Hildebrand's and many others now current. Seventeen first-class teachers within the limited acquaintance of the writer have left rather than submit to the barrage of senseless criticism of the schools during the last few years. Several students have changed registration from teacher preparation to other lines for the same reason. Prof. Hildebrand replied that teachers did not leave the profession because of criticisms, but because of Teachers College Dogmas and Dewey Dogmas. He does not explain how he knew those who said they quit because of the criticisms really quit for other reasons.

Prof. Hildebrand blames most of the school ills on John Dewey whom he quotes many times. All quotes are from *Democracy and Education* published in 1916. During the almost half century which has elapsed since 1916, Dewey has written several other books, one in particular to answer the chief criticisms of his views. Prof. Hildebrand does not explain why he did not read and quote from the later writings. Much is made of Dewey's statement in 1915 that: "Too rarely is the individual teacher free from the dictation of authoritative supervisor, textbook on methods, prescribed course of study, *etc.*, that he can let his mind come to close quarters with the pupil's mind and the subject matter." (Page 127, *Democracy and Education.*)

Prof. Hildebrand does not explain why he omitted entirely from consideration the several studies of teacher reaction to supervision. These have been appearing for many years. These studies show teacher antagonism to authoritative supervision; they show enthusiastic approval of supervision which is democratic. This is to be expected. One of the most extensive studies revealed something of note, however. A considerable number of teachers objected vigorously to authoritarian supervision, but a *larger* number of teachers complained quite bitterly that, "Supervisors do not tell us what to do and how to do it!" Their annoyance was directed at the absence of authoritarian direction. The fifteen available texts on supervision stress strongly the necessity for cooperative, demo-

cratic supervision, and all condemn authoritarian supervision. Oddly, the one book which gives the most detailed summary of authoritarian principles, on the ground that if some supervisors will operate this way, they should know the best principles, gives also far more space than any other text to the principles of cooperative supervision. The "prescribed course of study" is still with us, but in steadily decreasing numbers and rigidity. Curriculum leaders have for years been working against rigidly prescribed courses.

Prof. Hildebrand decries especially, with several quotations, what is called Dewey's anti-intellectualism. Why are the following overlooked:

> There is not adequate theoretical recognition that all the schools can or need do for pupils as far as their *minds* are concerned . . . is to develop their ability to think. (*Democracy and Education*, Page 179.)
>
> The disciplined, or logically trained mind—*the aim of the educative process* —is the mind able to judge how far each of these steps (in thinking) needs to be carried in any particular situation. . . .
>
> The trained mind is the one that best grasps the degree of observation, forming of ideas, reasoning, and experimental testing required in any special case, and that profits most, in future thinking, by mistakes made in the past. What is important is that the mind should be sensitive to problems and skill in methods of attack and solution. (Dewey, *How We Think*, 1910 edition. Similar statements appear in the 1933 edition.)

Prof. Hildebrand quotes with disapproval, Dewey's statement:

> . . . the measure of the worth of the administration, curriculum, and methods of instruction of the school is the extent to which they are animated by a social spirit. (*Democracy and Education*, page 415.)

In criticising some of the necessary, useful changes in the curriculum, Prof. Hildebrand goes on to say: "How fortunate it is that Galileo, Newton, Beethoven, Faraday, and Pasteur had not been taught to work in an atmosphere of social sensitivity."

Anyone who denies social sensitivity to Pasteur knows no more than his name. Pasteur was moved again and again by sensitivity to conditions of life around him. Galileo was sensitive enough to the social climate of his times to recant his views which he knew to be correct. Copernicus delayed publication of his great book until what turned out to be his last year of life. Descartes, affected by what happened to Galileo, burned the manuscript of what may have been a great contribution. We might counter this comment on social sensitivity by saying: "What a shame that Jesus and Buddha, Confucius, St. Augustine, Cardinal Mercier, John Bunyan, David, the sweet singer before the Lord, Albert Schweitzer and many others were not taught to work in an atmosphere of quantification, slide rules, and decimal-place precision."

What blunders these men would have avoided. All they have to give us are spiritual and moral values—no precision, no predictability even though they try to imply there is. For instance, "Blessed be the pure in heart for they shall see God."

Now then: How pure in heart must one be? Will admission to the Presence necessitate 100 per cent purity, or will $99^{44}/_{100}$ per cent do, or will a school passing mark of 70 per cent permit admission? What experimental guarantee is there that the conclusion will follow the premise? What is the probable error in all this? Ah sweet mystery of quantification.

"Suffer little children to come unto me for of such is the kingdom of Heaven." Quite meaningless but any modern scientists could mend it. Suffer little children to come unto me:

who stand in the upper percentile on scientific aptitude tests
can handle a slide rule and micrometer
know a quadratic from a quatrain
can recite the table of atomic weights
can distinguish between a calipers and a calliope.

All others take the elevators just to the right of the gates and marked "Down."

Not everyone agrees with this contempt for social sensitivity and insight into human problems for which the school stands. If we do not develop "social sensitivity," insight into human relations, and ability to get along with others from family to international level, we may find ourselves in a situation where neither these nor any other things matter. Because of our lacks in these lines we fear the nearness of World War III. Einstein was once asked:

How will the third world war be fought?
That I cannot predict, but I can tell you how the fourth world war will be fought.
And how will that be?
With sticks and stones.

Let us look further on this all important matter of social insight and human relations.

Life is social and man is born to be social, that is cooperative, an interdependent part of the while, a working, interacting part of the community.—Ashley Montagu, *On Being Human*, p. 83.

It seems to be not unrealistic to ask that a teacher acknowledge positive values in several directions. He had better be one who cherishes the democratic idea, who is clear in the realms wherein scientific does and does not disclose truth, who cherishes a humble and reverent approach to problems of living, and who accepts the obligation to be guided by an ethical concern for all his fellowmen. In short, some heartening vision of the potentialities of human betterment to be brought about by human effort is the least possession which should be helping to give purpose and direction to the teacher.—Ordway Tead, *College Teaching and College Learning*, pp. 11-12.

I believe in aristocracy . . . not an aristocracy of power, based upon rank and influence, but an aristocracy of the sensitive, the considerate, and the plucky. Its members are to be found in all nations and classes, and through all the ages, and there is a secret understanding between them when they meet.

They represent the true human tradition, the one permanent victory of our queer race over cruelty and chaos.—E. M. Forster, from the essay, "What I Believe" in *Two Cheers for Democracy*.

Inevitably, man is measured by his largest concerns and by what he regards as the ultimate questions. If he is troubled only by what happens to him here and now or in the hereafter, then his measurement is quickly taken and it is not necessary to use the long rule.

But if a man places a high value on life, whatever its accent or station; if he respects the mysterious but real connection between himself and the people who have gone before and those not yet born, then there are proportions in his measure, beyond estimate. In such a man, the gift of awareness has come fully alive.—Norman Cousins, *The Saturday Review*, editorial, "The Men of the Golden Rule," May 17, 1958, p. 24. Quoted by permission.

It is very depressing to live in a time when it is easier to split the atom than to break down a prejudice.—Albert Einstein

We are discovering the right things in the wrong order, which is another way of saying that we are learning how to control nature before we have learned to control ourselves.—Raymond Fosdick

The preservation of the modern nation is not merely a matter of food getting and defense against enemies; it is far more the problem of developing unity of ideas and solidarity of beliefs and ambitions. It is much more important for Americans to understand public policies and to think in similar terms than to be able to perform any particular acts of skill.—C. H. Judd, *The Psychology of Social Institutions*, p. 216.

Physical scientists insist on precision, statistical reliability, controlled observations, predictability, and rightly so. Physical scientists can make a basic *scientific* error, may be led astray by the far greater difficulty of the social fields, and believe that these fields cannot be subjected to objective inquiry. Physical scientists are in serious *scientific* error in ridiculing the partial findings and the new terminology of the social fields. The history of astronomy and chemistry particularly reveals that, when on a level of maturity comparable to education and psychology of today, chemists and astronomers made ludicrous blunders and held beliefs that were fully as weird as anything in social science today. One of the truly great physicists recognizes this:

I am aware of the difficulty of establishing in these fields (the social disciplines) rigorous criteria for competence and qualification. Nevertheless, at a time when the whole world realizes that many of its most vital problems depend upon an understanding of human behavior . . . and of the regularities which underlie the operations of our varied society, we should recognize the great benefits which may come from attracting men and women of prominence to the study of these questions.—Dr. J. J. Oppenheimer

We need not here take space to note the considerable progress which has been made in getting considerable realiability, validity, and predictability when dealing with problems wholly within the social fields. The physical scientists have played a great and important part in shaping and improving our civilization. The great discoveries to come, however,

Now then: How pure in heart must one be? Will admission to the Presence necessitate 100 per cent purity, or will $99\frac{44}{100}$ per cent do, or will a school passing mark of 70 per cent permit admission? What experimental guarantee is there that the conclusion will follow the premise? What is the probable error in all this? Ah sweet mystery of quantification.

"Suffer little children to come unto me for of such is the kingdom of Heaven." Quite meaningless but any modern scientists could mend it. Suffer little children to come unto me:

who stand in the upper percentile on scientific aptitude tests
can handle a slide rule and micrometer
know a quadratic from a quatrain
can recite the table of atomic weights
can distinguish between a calipers and a calliope.

All others take the elevators just to the right of the gates and marked "Down."

Not everyone agrees with this contempt for social sensitivity and insight into human problems for which the school stands. If we do not develop "social sensitivity," insight into human relations, and ability to get along with others from family to international level, we may find ourselves in a situation where neither these nor any other things matter. Because of our lacks in these lines we fear the nearness of World War III. Einstein was once asked:

How will the third world war be fought?
That I cannot predict, but I can tell you how the fourth world war will be fought.
And how will that be?
With sticks and stones.

Let us look further on this all important matter of social insight and human relations.

Life is social and man is born to be social, that is cooperative, an interdependent part of the while, a working, interacting part of the community.—Ashley Montagu, *On Being Human*, p. 83.

It seems to be not unrealistic to ask that a teacher acknowledge positive values in several directions. He had better be one who cherishes the democratic idea, who is clear in the realms wherein scientific does and does not disclose truth, who cherishes a humble and reverent approach to problems of living, and who accepts the obligation to be guided by an ethical concern for all his fellowmen. In short, some heartening vision of the potentialities of human betterment to be brought about by human effort is the least possession which should be helping to give purpose and direction to the teacher.—Ordway Tead, *College Teaching and College Learning*, pp. 11-12.

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will probably not be in those fields. They will not deal with nuclear fission and atomic explosions. These cannot aid in solving the problems of human motive, of human thinking, of inter-relations between people from neighborhood to the world. The study of human personality, of the conventions of civilized society, and of the difficulties which men get into in trying to organize their lives together are the roads to societal survival.

The *Christian Herald,* a Protestant magazine, quotes with enthusiastic approval the statement of a Catholic Bishop, John J. Wright of Worcester, Massachusetts: "All the scientific training for which so loud and frenzied a cry is being raised will dehumanize us even further if our schools abandon the courses in music, languages, history, literature, philosophy, and religion which make them the fostering mother of balanced persons and not just automatons.

The matter can be summarized through reference to a statement by the greatest physical scientist of our times. Einstein was once asked why it is that we have made such giant strides in science, physics in particular, but are still immature in politics, squabbling as childishly as did the Greeks and the Trojans. His reply is a remarkable, but true statement: *"Politics is harder than physics."*

We think of mathematics, physics, astronomy, and the like as "difficult," whereas they are merely complex. A good mind is necessary, to be sure, but time and patience, paying strict attention to principles and processes will get the answers. Scientists on the frontiers of knowledge are another story. Politics, and human relations generally, are enormously more difficult, *first,* to understand, and, *second,* to get answers which will stand up. Ortega y Gassett, late professor of history at Madrid, and Pitirim Sorokin, Professor of Sociology at Harvard, have said essentially the same thing.

Prof. Hildebrand said in another connection that "Education is too important to be left to the educators." Would it be rude to say that, "The future of the human race is too important to be left to the scientists?"

Direct *good* minds into the physical sciences by all means, but, far more important, let us direct *better* minds into the social disciplines—politics, economics, anthropology, sociology, human relations, group dynamics, comparative religion, medicine, psychiatry, and biology of living things. Let our *best* students examine the history of slavery, the history of religious persecution, the social effect of new inventions and discoveries, the history of epidemic diseases, of sanitation, and the effect of these on civilization. Let them study the history of civilization, the long, slow, tedious, often bloody process of achieving the fundamental institutions and conventions by which society and civilization perpetuate themselves, and enable individuals to realize themselves. Why? So we may all come

to understand the mechanism of human cooperation, of human interdependence, and of the kinds of difficulties men run into in trying to organize their lives together. He who has even a glimmer in some of these fields will not sneer at "social sensitivity," nor will he condone the many inaccurate or senseless criticisms of the schools. Despite the barrage of criticism, the schools are steadily correcting weaknesses of which the schoolmen know far more than the outside critics. The schools will continue to play their valiant part in the preparation of people to live in our uncertain and precarious world. The physical scientists will continue to improve the world and, particularly, to aid us in understanding the space age. No one should forget, however, that it is people who will live in the space age.

Italy's Ten-Year Education Plan

THE Italian Cabinet on September 11, 1958, approved a $2,200,000,000 ten-year development plan for improvement of national educational facilities. This ten-year educational plan entails an expenditure of $2,200,000,000 for buildings, equipment, teachers, and assistance to schools and students on all levels. It clearly represents the most important effort proposed to the Italian people for its own complete development since the liberation. By approving the plan, the Government maintains its pledge to Parliament and gives the two Chambers the opportunity to make a decision of far-reaching importance for the youth and the future of Italian democracy and of the Italian nation. The Government is certain that, in accordance with its noble traditions, Parliament will make its own decisive contribution to a problem of such great importance.

The ten-year educational bill is divided into three parts and ensures financing of the work which must be completed in the ten-year period from 1959 to 1969. Salient provisions of the bill are as follows:

1. Extension and integration of extraordinary appropriations for the building of new schools, in addition to the increase to $5,200,000 of the expenditures for the 35 year grants made to public agencies. This must, according to law, provide for the construction of school buildings and obtain the necessary funds through loans from the "Cassa Depositi e Prestiti" which are to be granted with absolute priority. These appropriations ensure a school building program with an expenditure of $960,000,000 which will be sufficient to satisfy the needs arising from present deficiencies, and the necessities of the progressive expansion of the school system. In the case of Communes which do not comply with the law, the State will intervene with substitute programs.

2. Special building appropriations consisting of contributions for day schools (kindergartens) totalling $4,800,000 for each fiscal year of the ten-year period; appropriations for the construction or remodeling of rural elementary schools totalling $1,700,000 for each of the ten fiscal years.

3. Appropriations for university construction; that is, construction of new buildings and enlarging, remodeling, and completion of existing buildings totalling $19,200,000 for each of the ten fiscal years. Of this sum, $11,000,000 will be paid immediately by the State while additional sums for equipment and furnishing will be paid annually as required by construction progress.

4. Appropriations for the functioning of day nurseries, ranging from $4,000,000 in the fiscal year '59-'60 to $11,000,000 in the fiscal year '68-'69; for aid to needy students ranging from $4,000,000 in the fiscal year '59-'60 to $4,800,000 in the fiscal year '68-'69; for popular schools totalling $38,400,000 in six years.

5. Appropriation for the institution of elementary-school differential classes beginning with $560,000 in the fiscal year '59-'60 and increasing to $3,440,000 in the fiscal year '68-'69.

6. Appropriation for scholarships raising the present total expenditure to $2,400,000 for the fiscal year '59-'60, with progressive increases to $11,680,000 in the fiscal year '68-'69.

7. Increase of expenditures for assistance to university students to $2,400,000 yearly for ten years; increased appropriations to $800,000 yearly for scholarships to university students and young graduates.

8. Expenditures for supplies and equipment for laboratories, workshops, and libraries in elementary and secondary schools will be set at $13,920,000 annually; $8,000,000 annually for additions to scientific and teaching equipment required by universities.

9. Increase of regular State grants to universities and special scientific institutes to $12,800,000.

10. Assurance of appropriate personnel requirements with staff increase where needed: for elementary schools through an increase of appropriations ranging from $1,600,000 for the fiscal year '59-'60 to $16,000,000 in the fiscal year '68-'69; for obligatory schools above the five-year elementary period, through an increase ranging from $9,856,000 in the fiscal year '59-'60 to $97,000,000 in the fiscal year '68-'69; for advanced secondary schools (technical institutes, normal schools, and lyceum) through appropriations ranging from $4,608,000 in 1959 to $72,160,000 in 1969; for vocational schools throughout appropriations ranging from $960,000 in the fiscal year '59-'60 to $18,240,000 in the fiscal year '68-'69; increased appropriations ranging from $780,000 in the fiscal year '59-'60 to $2,080,000 in the fiscal year '68-'69 for art education.

11. Creation of an additional 180 University Chairs and of 900 additional posts of University Assistant.

12. Absolutely free education in compulsory and professional schools, free of taxes and other fees of any kind for matriculation, attendance, or examinations in the above schools, beginning with the '59-'60 scholastic year.

New Classes and Schools

For the period preceding implementation of the ten-year plan, which will begin on July 1, 1959, the Cabinet has increased by $13,440,000 the funds appropriated for the Ministry of Education for the current fiscal year 1958-59 for the institution of new classes and schools. The Cabinet has also approved:

1. The drafts of two bills concerning, respectively, the reorganization of lyceum (classic and scientific) and of Teaching Schools and the reorganization of Technical Institutes;

2. The draft of a bill concerning the institution of chairs for teaching foreign languages in secondary school and vocational training schools;

3. The draft of a bill concerning modification of the career and organization of the secretarial personnel of secondary, classic, and scientific as well as tea schools.

The Cabinet has also approved the general lines of the draft of a bill concerning vocational schools which, after being submitted to the

examination of the National Council of Economy and Labour and of the High Council of Education, will be re-examined by the Cabinet for the final approval.

The Minister of Education has announced that he will shortly submit to the Cabinet the draft of a bill concerning the observance of compulsory school attendance by pupils between 11 and 14 years of age and concerning the juridical status of the teaching, directing and inspecting personnel of elementary, secondary, and art schools.

The Cabinet has ordered that the following studies be speeded up: studies on the development of Maternity Schools, on new regulations for non-State schools, on the reorganization of the Provincial Consortia for technical and vocational education, and on the reform of University organization.

The Prime Minister Discusses the $2 Billion School Improvement Plan

Following is the text of an interview with Prime Minister Amintore Fanfani on the Italian ten-year educational plan. Signor Fanfani was speaking in his capacity as Chairman on a committee of Cabinet ministers who developed the plan.

Question—"What are the salient points of the plan—those which best differentiate it from similar projects in the past?"

Answer—"We can name three. *First:* the introduction, according to provisions of the Constitution, of absolutely free education until the age of 14 and the extension—something which not even the Constitution required—of this principle to free education in professional schools regardless of age. *Second:* the construction of 150,000 new school rooms in addition to the rooms necessary for the new university construction program. Thus we will satisfy all present needs and will meet requirements for an increase in the student population in the next few years. *Third:* the plan provides for an increase in personnel and services on every grade and level to the extent of 70,000 positions. Thus with new school rooms, new teachers and with an increase in scientific equipment, the Italian schools will offer facilities for two million new students every year.

"The thought of so many children exposed to new instruction and new educational opportunity fills me with pleasure, and the joy is completed by the knowledge that tens of thousands of intellectuals will be able to find satisfaction in following their vocations as teachers, while for ten years many thousands of unemployed will find work in the construction of new schools to build a new future for their own children. It is just and truly admirable that the most important financial effort that Italy has been called upon to make in the first ten years of the Constitution be directed to the field of education; that is, to truth, guarantee of liberty, and, for youth, faith in the future."

QUESTION—"Actually, how was the ten-year educational plan born?"

ANSWER—"The origins of the educational plan are to be found in an invitational letter which I sent on Aug. 16, 1957 to all ten thousand secretaries of the Christian Democratic Party (of which Fanfani is Secretary General—editor's note) so that, in view of the coming elections, they could tell me what the principal desires of the voters were. Upon reading the many replies which immediately began to come in, I realized that a very large number wanted a solution of the school problem—schools that would prepare youth for work and reassure families concerning their children's future.

"This problem had already occurred to me as a particularly urgent one in 1956, and the replies to my questionnaire of August 1957 convinced me of the need for greater boldness. I undertook a pledge to give priority to the school problem in the Christian Democratic Party's electoral campaign and, during periodical lulls, I gathered together data as a starting point for a solution to the problem. When the electoral campaign ended and I was invited to form a government, I referred the problem to Parliament. On July 22, a committee of ministers for the ten-year educational plan was organized. It was composed of the Christian Democratic Ministers of Public Education, the Budget, the Treasury, and Public Works, in addition to the Democratic Socialist Minister of Labour and Social Security. I had the honor to be chairman of that committee. On Sept. 11, the Minister of Public Education presented to the Council of Ministers a bill on the ten-year plan for employment of funds totalling 1,386 billion lire (about $2.200,000,000) for the construction of new schools, increase in personnel, increase in scientific equipment, and additional assistance to students.

"We are now preparing to present the approved text of a bill to the new Parliament. We hope to achieve a favorable vote by the Chamber of Deputies and the Senate before the end of the current fiscal year. According to the bill, the plan should enter into effect on July 1, 1959, when legislative work must be completed so that the plan may be implemented."

Concerning criticism that the plan will develop too slowly over too long a period of time, the Prime Minister replied: "We hope that those who said the plan is too slow because it covers a ten-year period will be coherent and will help us avoid delays in its implementation."

The Book Column

Professional Books

Annual Report 1957-58. Evanston, Illinois: Lloyd S. Michael, Superintendent of Schools. 1958. 111 pp. Each year the Board of Education of School District 202, in accordance with Illinois law, makes its annual report to the citizens of Evanston. Originally the purpose of this report was primarily financial—to explain to taxpayers the use made of taxes collected for school purposes. The report has grown, however, to include an explanation of both the curricular and extracurricular programs of the school, as well as a number of other features interesting to the public and to high schools, colleges, and universities in the United States.

As a rule, one or more departments of the school are featured in a series of special articles each year. This year, however, with the high school observing its seventy-fifth anniversary and having for the first time a complete physical plant, the editor's lens and pen have focused on the new facilities—two new swimming pools; a new main office with guidance services and department chairmen's offices flanking it to the north and south; a remodeled and expanded library; and a new auditorium and music wing.

The new main office was used for the first time last summer, the library in September, the pools in November, and the auditorium and music wing in May. Thus, the school year 1957-58 was an eventful one, one long envisioned by Evanstonians interested in their high school.

The first part of this *Annual Report* consists of an opening article commemorating the 75-year history of the school and linking the past to the present as Evanston Township High School looks to the future. There follow a series of articles describing the new facilities and a number of others discussing significant aspects of the school's program during the 1957-58 school year. The second part of the *Annual Report*, as usual, consists of material primarily of a reference nature.

BOWER, E. M., *et al. A Process for Early Identification of Emotionally Disturbed Children.* Sacramento: California State Department of Education. 1958 (August, Vol. XXVII, No. 6). 119 pp. Teachers observe children from three to six hours a day over a period of many years. Therefore, there is little doubt that the school is in the most strategic position of any social institution in finding those children who are most prone to emotional difficulties.

The research study reported in this bulletin contains practical suggestions regarding ways emotionally disturbed children can be recognized early. This research project is a good example of state and local agencies working together on a research study of a pressing problem. The results are significant contributions to our knowledge about the mental health of children and offer the school administrator and teacher opportunities to take further steps in promoting sound mental health for all children.

Also prepared by Dr. Bower and available from the same source is *The Psychologist in the School* (1957. 51 pp), a report of a workshop for school psychologists held at San Francisco State College during the summer of 1956.

This discusses how the work of the psychologists in the schools can assist in making public education an effective force in mental health. Other workshops held at Long Beach and San Francisco State Colleges in June 17-30, 1957, are reported in a 72-page publication entitled *Diagnostic Problems in Mental Retardation*. This publication, available from the same source, points out ways in which this work can be done most effectively.

BURKE, V. M. *Newsletter Writing and Publishing: A Practical Guide*. Columbia University: Bureau of Publications, Teachers College. 1958. 127 pp., $2.50. This book is intended for all persons seeking to improve communication in single institutions, school systems, professional and cultural organizations, and public and private agencies. It is especially designed for editors and staffs who must put out effective local, state, and regional newsletters on slender budgets and often without the assistance of regular office personnel.

The design of the book is cumulative. That is, a new chapter usually introduces a new consideration but does not necessarily finish it. This is true of both the four chapters on production and the four on writing style, in which several subjects are discussed more than once, each time from a different perspective. The book attempts to give an unfolding, organic view of newsletter work by introducing subjects and building on them in subsequent chapters, rather than categorizing and exhausting each subject within the bounds of a single chapter.

This book has grown out of the ideas and insights of people in a wide variety of professional fields. Cooperating in its development were three departments of the National Education Association—the Department of Elementary-School Principals, the National School Public Relations Association, and the Department of Classroom Teachers; many members of the faculties and staffs of Teachers College, Columbia University and of the University of Wisconsin—Milwaukeee; and hundreds of newsletter editors and readers all over the country, who contributed ideas through interview and questionnaire and who helped to build the collection of small publications on which the book is partially based.

HUTSON, P. W. *The Guidance Function in Education*. New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd Street. 1958. 689 pp., $6. This book is composed of 19 chapters—History and Definition of the guidance function; the social scene in which guidance operates; the educational scene in which guidance operates; evidence of the need for guidance; the components of the guidance function; the features of the guidance program; organization of school and of the offering; curricular and extracurricular experience; the study of occupations; the home room and alternative organizations; analysis of the individual: information obtained by observation and inquiry; analysis of the individual: ability and achievement; analysis of the individual: vocational interests, personal adjustment, and character traits; systhesis, diagnosis, and prognosis; counseling and treatment: issues and principles; counseling for some common problems; placement and follow-up; organization and administration of the guidance program; and evaluation.

Readers of this book will find help in their thinking about guidance. Chapters 1-4 define the function, show its relation to society and education, and cite surveys which evidence the need for performing the function. Chapter 5 sets forth a breakdown of the function into its basic components. The balance of the book describes the various features of the guidance program and takes up their bearing on the components of the function.

This book is for all school workers. Accepting the point of view that guidance is a pervasive function, performed in notable degree by the same activities which are carried on for growth and development, it is a responsibility of teachers and principals as well as of specialists called counselors and deans. Again, guidance is needed at all school levels. Hence, due account has been taken of its exercise in the elementary, secondary, and higher schools.

McCLELLAN, G. S., editor. *America's Educational Needs.* New York 52: H. W. Wilson Company, 950 University Avenue. 1958. 269 pp., $2. The topic of American education has become one of the "great debates" of our national history. Three chief factors may be singled out as causes of the current controversy. First, the increase in births in the 1940's has created the formidable problem of providing more space for seating pupils and more teachers to man the classrooms. Second, the dramatic achievements of the Russians in the fields of science and technology have awakened the nation to the need to keep our educational system at the peak of efficiency. And third, the entire world is at the threshold of a revolutionary change involving technological developments undreamed of a few decades ago.

The great debate on education continues and raises questions to which the answers are still being sought: Why and in what respects has education fallen short? What remedies lie at hand both for the immediate and the long-range future? Are Soviets schools better than ours? Can our high school do the job?

An almost complete re-examination of our educational system is now going on, evidence of which will be found in this compilation edited by Grant S. McClellan, staff member of the Foreign Policy Association. *Pro* and *con* articles are given in four main sections headed: Diagnoses and Challenges, More Specific Problems, Lessons from Abroad and finally, Toward Improvements.

Pittsburgh Schools. Pittsburgh, Pennsylvania: Board of Public Education, Division of Curriculum Development and Research. 1958. (March-June, Vol. XXXII, No's. 4-5). 56 pp. This is the latest in a number of periodic studies of graduates which have been carried on in the Pittsburgh public schools by the Division of Guidance and Child Accounting and the Division of Curriculum Development and Research. The purpose of these studies has been to test the "product" of the schools against the current thinking of our society and according to the operation of the "product" in that society beyond high school. Implications for the evolving school program are sought in these studies. It is recognized, of course, that evaluations of this type cannot approach the exactness involved in the testing of the material products of industry. They do, however, provide important clues to changes which may be desirable in the school program.

This is a three-part study. Part I presents an analysis of the status of the graduates of the 12 senior high schools with reference to intelligence levels, the number of credits earned, and the credit earned in mathematics, science, and foreign languages. Part II presents the results of a follow-up questionnaire sent to the graduates of the vocational high schools. Conclusions based on the three parts of the study are listed at the end of this report.

SALMON, P. B. *Fire Insurance Principles and Practices in School Districts Employing Nationally Affiliated Business Officials.* Evanston, Illinois: Association of School Business Officials, 1010 Church Street. 1958. 88 pp., $2. School fire insurance is a topic in which school administrators are vitally interested. ASBO has been investigating—and fighting—this school fire

insurance problem since 1921. The problem is that schools in America today enjoy a comparatively very low loss ration, but the insurance companies still insist upon schools paying a fire insurance premium that is as high, or nearly as high, as other classes of buildings that have a comparatively high loss ratio.

One chief concern of this study, as discussed in the preceding paragraph, was that of bringing up to date the findings of the continuing studies which have been conducted over the years since 1921 by the Association of School Business Officials of the United States and Canada. Their reports (46, 49, 50) have shown a wide variety of procedures to be in use by school districts in developing, implementing, and supervising fire insurance programs. In the interest of standardization and efficiency of operation, the Association has developed a considerable number of recommendations to alert its members to the importance of conducting well-planned programs of fire insurance for the protection of physical plant facilities. The extent to which the insurance programs currently in effect in school districts conform to the recommendations of the three Association reports (and to those of recognized experts in the field of school fire insurance) gives some indication of the extent to which today's school business officials are applying recommended procedures.

In addition to this purpose, this study was designed to include several areas not previously explored in Association studies of the past. One such unexplored area dealt with the procedures and methods being used by rating bodies in various rating jurisdictions of the United States. This section of the study was designed to acquaint school business officials with the manner in which building rates are established, and to enable them to put this knowledge to use in securing the best possible insurance rates for their districts.

A second important question not included in previous Association studies was a determination of whether districts were making use of a regular and systematically structured method of fire prevention inspection of all buildings and properties under their control. Included in this phase of the study was a determination of the person to whom inspection responsibility was delegated, his base of operations in relation to the property inspected, and whether a regular in-service training program existed to develop his competence in carrying out this responsibility.

A third unique feature of the present study was an attempt to establish standards or criteria of good fire insurance practice for public schools in the United States and Canada. Opinions of a selected panel of specialists were sought in carrying out this phase of the investigation.

SMITH, G. B. *Let's Look at the Record!* Lawrence: Dean, School of Education, University of Kansas. 1958. (September, Vol 1, No. 1.) 71 pp., Free. Much criticism has been leveled recently at the American public high school for its failure to provide training in the so-called traditionally "solid" subjects. Rather than take part in a verbal battle which has already produced more opinion than fact, Dean Smith chose to examine the high-school transcripts of all those freshmen entering the University of Kansas in September 1956, who had been graduated from Kansas high schools the preceding June. His study reports the extent of high-school training for 1,124 students from 263 different high schools in English, foreign languages, mathematics, and science. College and university faculty members and high-school principals, as well as all the patrons of the public schools, will find the

answers here to many questions they have been asking about the high-school preparation of youth.

We Build, A Progress Report. Chicago: Board of Education, Office of the General Superintendent. 1958. 36 pp. (8½" x 11"). This annual report of the general superintendent includes statistics on source of income and expenditures for the city's schools and articles on An Educational Enterprise; Laboratories for Learning; Cost and Quality; Moving Forward, 1952-59; and More Than Bricks and Mortor. Maps and pictures in color.

Books for Teacher-Pupil Use

ADLER, IRVING. *The New Mathematics.* New York 36: The John Day Company, 62 W. 45th Street. 1958. 187 pp., $3.75. This book reveals that the concepts of advanced mathematics lie hidden in the elementary mathematics we all learned in school The author brings these concepts out of their hiding places as he traces the steps by which our number system has grown from the ordinary whole numbers we use for counting, through integers, rational numbers, and real numbers, to the complex numbers with which the electrical engineer describes an alternating current. In this way he shows the familiar origin of such unfamiliar concepts and terms of the new mathematics as groups, rings, fields, vector spaces, algebras, homomorphisms, ismorphisms, and homeomorphisms.

ANDERSON, VERILY. *Beware of Children.* New York 16: William and Morrow and Company, Inc., 425 Fourth Avenue. 1958. 256 pp., $4. Donald and Verily Anderson had good reason to know the delight, distraction, and just plain cussedness of children. From Marian (age 13) to the burbling babies, every Anderson was a decided individualist, conforming to parental authority when necessary, but mostly having a wonderful time from sheer joy of life!

The Andersons left London for the same reasons that all city-dwellers leave cities—to exchange concrete cliffs for real rocks and rills. And when they arrived in Sussex, there was certainly plenty of good fresh air. It was wonderful. There were also, they found, plenty of bills. The bills weren't so wonderful. The Andersons conferred, and hence was born a new career for a singularly happy couple. Deciding that they could do best what they loved best, and loving children, Donald and Verily, opened their home (for good stiff fees) to youngsters whose parents could not (or would not) have them home for school holidays.

ANNIXTER, JANE AND PAUL. *Buffalo Chief.* New York 11: The Holiday House, 8 W. 13th Street. 1958. 219 pp., $2.95. For countless generations the lives of the American bison and the Plains Indians were as one. Periodically stirred by the rhythm of the seasons, the great buffalo herds followed the ancient trails from north to south and back again, and the Indians followed the buffalo. It was a pattern and way of life regarded by both as inevitable. The Indians depended on the buffalo for food, for clothing and shelter, and for sport. In turn the buffalo accepted Indian hunts as only another natural hazard of their nomadic life, along with wolves and grizzlies, floods and drought and blizzards. But with the coming of the white man, this age-old relationship was changed forever. Both Indian and buffalo, threatened with extinction, struggled desperately for survival.

The Autobiography of Theodore Roosevelt. New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1958. 384 pp., $4.95. In this new edition of the famous autobiography, supplemented by selections from his letters, his speeches, and his historical and other writings, TR holds forth on every important reform of his administration, on every move of our diplomacy that came into his ken, and on his hopes for the future of America. But he also talks of the fads he endorses, and of the notions that raised his wrath. He was a man of violent likes and dislikes. If he had not been, he would not have captured the sympathy of the American people.

Theodore Roosevelt was an exceptional President of the United States. He was the first President since Andrew Jackson to make the people realize that our government was a flexible instrument. This was a revolutionary notion in 1901, when he succeeded McKinley. For the men who occupied the White House since Lincoln's time had rarely listened to the murmur of discontent.

TR always listened, much as he might disapprove of the rhetoric of William Jennings Bryan, or the lonely moral fervor of Governor Altgeld of Illinois. Unimpressed by the very rich, and often angered by the radicals on the left, he made it possible for the nation to steer a middle course that answered many of the questions raised by discontented citizens.

BALDWIN, H. W. *The Great Arms Race.* New York 36: Frederick A. Praeger, Inc., 15 West 47th Street. 1958. 116 pp, $2.95. If the air raid sirens were to sound in American cities tomorrow, would we survive? Could we retaliate? By presenting for the first time within the pages of any book a comprehensive and authoritative appraisal of U. S. military capabilities *versus* those of the Soviet Union—plane by plane, ship by ship, and missile by missile this book answers these important questions, all of which have become increasingly alarming since the advent of the sputniks.

In the most up-to-the-minute account available, the author, who is military editor of the *New York Times* and who has long been the country's foremost writer on military affairs, here examines and compares the world's two great arsenals, weapon by weapon. He presents a detailed study of the relative status of United States and Soviet manpower, of the two countries' air defenses, their missiles, their nuclear weapons, and their strategy. He has made a careful analysis of the difficulties the U.S.S.R. would encounter if it were to attempt to launch a surprise attack either on our bases overseas or on the United States itself.

The United States still maintains a lead in most areas of the arms race, but Russia has been closing the gap since 1949 and has actually overtaken us in some key areas. Mr. Baldwin has devoted a large part of his book to a study of these United States weaknesses and to an analysis of what we can do in terms of defense spending and reorganization in order to attain maximum strength. He has also graphically illustrated his text with maps, charts, and tables, all of which clarify for even the most general reader the present—and the possible future—position in which the United States stands, or will stand, in relation to Russia in the great arms race.

BENDICK, JEANNE. *The First Book of Airplanes.* New York 21: Franklin Watts, Inc., 699 Madison Avenue. 1958. 66 pp., $1.95. We see planes every day—all kinds of planes. Yet a plane, heavier than the air that supports it, is still a wonderful thing. Do you know what makes it fly? Simply and with many graphic illustrations, the author explains lift, which raises a plane from the ground, and thrust, which pushes it through the air. She describes

the parts of a plane and explains the different types and the various kinds of engines they may have; and she tells how planes are able to travel the skies safely and what work they do for us.

BONZON, P. J. *Paquita, The Ballerina from Mallorca.* New York 16: Sterling Publishing Company, Inc., 419 Fourth Avenue. 1958. 224 pp., $3.50. The heroine of this romantic and heartwarming story is Paquita. When the story opens, she is 10 years old, Spanish, and very poor. She has the grace of a dragonfly and the liveliness of a grey lizard and, when she dances upon the back of her burro in the market place of Palma on the Island of Mallorca, no one can refuse to buy the gayly colored sandals she offers. Paquita's love of dancing is as natural as the wind blowing over the island. But after the August festival where she sees the perfectly trained ballerinas of the Ballet of Castile perform, her heart is no longer in her own pirouettes.

Just when everything seems most desperate, Paquita's fortunes take a turn for the better. She leaves the island for Spain and there, befriended by the shoeshine boys of Valencia and a kind Senora in Madrid, Paquita works to make her dream of being a Royal Ballerina come true.

BROOKS, W. R. *Freddy and the Dragon.* New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1958. 249 pp., $3. Freddy and some of his friends returned from a riding trip through New England and landed right in the middle of a rather cool reception from the Centerboro citizens. The travelers weren't too concerned about it until Freddy received a message, in the middle of the night, from his old client and friend Mrs. Peppercorn. Trouble was afoot and terrible things had been going on—gardens raided, bicycles stolen, houses broken into, and, even more alarming, there were threatening notes demanding protection money. When Freddy starts out to solve the mystery and end the crime-wave, he runs head on into a headless houseman and his henchmen. But Freddy, Uncle Ben, and the farm animals, with the special help of their own Dragon, finally catch the culprits and bring them to their just rewards.

BROWN, MARCIA. *Felice.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1958. 32 pp., $2.95. This lovely book is Venice, from its jacket with the little cat riding so proudly on a gondola, its handsomely designed endpapers, through its dreamlike pictures of Venice in rich blues, gold, rose, and black. The pictures call the reader back time and again to look at the detail.

BUCHANAN, F. M. *The Land and People of Scotland.* Philadelphia 5: J. B. Lippincott Company, E. Washington Square. 1958. 128 pp., $2.95. Scotland is a country of romance and hard work, of quiet rural scenes and smoky industrial cities, of high seas and sunny hills. Her history is rich in colorful personalities, critical battles and dramatic decisions. Bonnie Prince Charlie; Robert Burns; Mary, Queen of Scots; Robert Louis Stevenson; and many others have contributed their individual talents and excitement to Scholand's history and literature.

Her great cities, Edinburgh and Glasgow, are centers of culture, shipping, industry, education, and trade. People come from all over the world to the annual Edinburgh Festival. Scotland's hills and heather, fields, and lochs have made it a vacation paradise for golfers, hikers, hunters and fishermen. Scotland has given to the world inventors, administrators, poets, preachers, and sportsmen, and all who leave Scotland take with them to remote corners of

the globe their unique Scottish character and their great love for their native land.

BUCHSBAUM, W. H. *Television Servicing.* Englewood Cliffs, New Jersey: Prentice Hall Inc. 1958. 399 pp. This new, third edition of this book—the complete, detailed guide for servicing all TV receivers—is more useful and comprehensive than ever! Completely up-to-the-minute, it enables you to keep up with the latest advances in TV installation and repair. In this new edition, you will find: the latest circuits troubleshooting techniques, and such up-to-date topics as a transistorized TV set, remote control tuning, troubleshooting printed wiring, module type construction, and packaged circuits. Also, newest servicing hints and additional information on color television and on test equipment have been included. And you won't need to know higher mathematics in order to use this book!

CHAMBERS, PEGGY. *A Doctor Alone.* New York 16: Abelard-Schuman, 404 Fourth Avenue. 1958. 183 pp., $2.75. This is a vivid, spirited account of the life of Elizabeth Blackwell, the world's first woman physician, and the trail she blazed in the field of medical education for women who wished to follow her in a profession that before her time was barred to members of her sex. It presents a clear and vital picture of a valiant and inspired lady, her family, her friends, and her famous contemporaries. The background material is excellent and makes the world in which she lived come alive. She lived at a time in which courageous, creative non-conformists like the Blackwell family saw the evils of clinging to worn-out traditions and had the will and the zeal to initiate the reforms that were so desperately needed to fight them. Education for women, the abolition of slaves, woman suffrage, a single standard of morality, preventive medicine (through education in hygiene and sanitation) and, especially, the right of qualified women to earn a degree in a recognized school of medicine, are some of the controversial problems that the author weaves into this biography.

CHENEY, BRAINARD. *This Is Adam.* New York 21: McDowell, Obolensky Inc., 219 E. 61st Street. 1958. 301 pp., $3.95. The world of Adam Atwell, a Negro working as overseer for the Hightower family, didn't stretch far beyond the fields and the river he loved in an isolated part of Georgia. He was a man living close enough to the land to have to come to terms with it to live. His was a world where feuds were still fought and a man's word was as good as his strength and wits could make it.

Adam is, quite simply, "a man who was faithful when faith was tried." He had begun working for the Hightower family after Colonel Hightower had helped him out of unjust imprisonment. Years later when conniving townsmen threatened to victimize the Colonel's widow in a land deal, Adam stood by her though it meant that he became alienated from his own people and that his life was jeopardized by the plotters. *This Is Adam* is a fast-paced novel; the plot hinges on time—the time felt to close an important land deal. As it runs out, the men who stand to gain get desperate. The back country of Georgia at the turn of the century is always present as an undercurrent here; it is rich but wild, disturbing country which demands a commitment as deep as Adam's to his beloved Wyche Field.

The Complete Christmas Book. New York 21: Franklin Watts, 699 Madison Avenue. 1958. 352 pp. (7¼" x 10") $4.95. What really is Christmas in the family? How can we make it an even warmer, richer, more satisfying festival? As each Christmas season approaches, we are stirred with the hope

that this year we will know all of the holiday's deepest pleasures: the excitement of giving and the joys of being remembered; presents that are exactly right; a greener, prettier house; the aroma of perfect food; the peace of family work and fun.

This book will help its readers realize such a Christmas. In this book, there is gathered material that will heighten the pleasure of the holiday season for the whole family. Here is a book to be used from the moment in early fall when the thought of Christmas first hangs trembling in the air. Make it your Christmas manual. Consult it for ideas on gifts to make; new ways to swap them; handmade cards; recipes for old and new Christmas dishes; house and tree decorations to be made at home; Christmas music on records; and countless other things—even poems and stories to be read aloud Christmas after Christmas.

CRUMP, IRVING. *Our Merchant Marine Academy Kings Point.* New York 16: Dodd, Mead and Company, 432 Fourth Avenue. 1958. 252 pp., $3. The United States Merchant Marine Academy at Kings Point, Long Island, sends its graduates to sail our merchant ships all over the world. Ever since its dedication in 1943, Kings Point graduates have gone on to prove the value of the discipline and training they have received at the Academy in the various emergencies, great and small, that continuously arise at sea.

Irving Crump tells the interesting history of Kings Point, together with a description of the exacting curriculum to which its cadets are exposed. Dramatic stories of early disasters at sea, such as the sinking of the *Vestris* and the burning of the *Morro Castle*, demonstrate the necessity for the sort of education the Academy provides. Modern sagas of the sea, some of them narrated by Kings Point men themselves, dramatize their ability to meet crises of the deep, whether in peacetime, as at the scene of the *Andrea Doria* tragedy, or in wartime as members of the Naval Reserve.

DE SEGUR, P. P. *Napoleon's Russian Campaign.* Boston 7: Houghton Mifflin Company, 2 Park Street. 1958. 320 pp., $5. No great military campaign has stimulated the interest and the imagination of men more than Napoleon's disastrous invasion of Russia in 1812. Among all the accounts of this great event, the Comte de Segur's has long been one of the most reliable and dramatic. Now for the first time in over fifty years it is made available to the American public in a new translation and an edition which omits only tedious detail or repetitions which would bore the modern reader.

The Comte de Segur was born in 1780. His father had been Ambassador to Russia and his grandfather a Marshal of France and Louis XVI's Minister of War. As a young man of nineteen, impoverished by the Revolution, Segur earned his living writing plays. He was a victim of the frustrations facing his class in the late days of the Revolution when, one day in 1799, he saw Napoleon emerge with a bodyguard of cavalry from the Palais des Tuileries. The glamour of this figure snapped Segur out of his lethargy, and he decided to become a soldier. Bonaparte made him a lieutenant, and in a few years the young man rose to be a general and aide-de-camp to the Emperor. It was in this capacity that he went on the Russian Campaign of 1812.

Napoleon's Russian Campaign begins with the Grand Army poised on the banks of the Niemen ready for the invasion of Russian soil. It follows the campaign closely, with dramatic chapters on the great Battle of Borodino (or the Moscowa River), the capture and burning of Moscow, and the tragic retreat.

DICKENS, CHARLES. *David Copperfield.* New York 20: Pocket Books, Inc., 630 Fifth Avenue. 1958. 864 pp., 75¢. Dickens' favorite novel reflecting his own youth. Introduction by Joseph Mersand, Chairman, English Department, Jamaica High School, New York.

DOLAN, JR., E. F. *Pasteur and the Invisible Giants.* New York 16: Dodd, Mead and Company, 432 Fourth Avenue. 1958. 222 pp., $3. Few lives have been so completely dedicated to science as Louis Pasteur's. From his first job as a laboratory assistant, Pasteur spent long hours searching after scientific truth. During the nineteenth century, very little was yet known about the tiny living particles that populate the air, water, and substance around us—the microbes that are capable of destroying or preserving life. Pasteur's constant study of these "invisible giants" led him down many paths and resulted in phenomenal contributions to today's world.

Question after perplexing question kept Pasteur pacing in his laboratory late at night, year after year, trying to find solutions to crucial problems. Was there really "spontaneous generation"? What caused fermentation? What mysterious blights were ruining the wine and beer and silk industries of France? How could one convince doctors and hospitals that antiseptics help to prevent the spread of contagious diseases? Would vaccinations eradicate chicken cholera and sheep and cattle anthrax? And, finally, how could people be protected from dread and baffling hydrophobia?

DOUGLASS, E. L. *The Douglass Sunday School Lessons.* New York 11: The Macmillan Co., 60 Fifth Avenue. 1959. 503 pp., $2.95. This is the 1959 volume of the widely used Douglass annuals. A commentory on the International Sunday School Lessons is a real aid to the teacher. Each lesson includes the passage under study from the Bible, suggested daily Bible readings for the week, a lesson plan with extensive comments on the lesson, a list of question and discussion topics, and hints for teachers. It is also invaluable for home reading and study.

DRUON, MAURICE. *Tistou of the Green Thumbs.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1958. 186 pp., $2.75. Tistou lived in the town of Mirepoil. From the first, he was different from other boys and, because he asked so many questions, his education had to be quite special. This education began with gardening, and Mr. Moustache, the old gardener, soon found out that Tistou had "green thumbs." "What do you do with green thumbs," asked Tistou. "What do you use them for?" "Oh, they're wonderful things," said the gardener. "A true gift of heaven!" Tistou used his green thumbs in mysterious and astonishing ways—even on the cannon made in his father's factory. The secret of who Tistou really was is held to the last page, with its surprise ending.

DAUGHERTY, C. M. *Wider than the Sky.* New York 17: Harcourt, Brace and Company, 750 Third Avenue. 1958. 158 pp., $2.95. Space is the barrier between our civilization and new worlds in which to shape an improved tomorrow. How have we—in a remarkably short time—reached the edge of space and how can we meet its challenges? Mr. Daugherty deals with these questions in concise and remarkably vivid prose.

Based on broad research—including interviews with leaders in the field, both pioneers and today's test pilots and planners—he traces the development of aviation from the time of the Wright brothers to contemporary experiments and accomplishments with jets, missiles, and rockets. Throughout, he lays stress on the many current opportunities in aviation for young

men and women, and, in a final chapter, "Help Wanted," he lists the various kinds of jobs—both in private industry and government service—together with their requirements.

EVANS, MAX. *Southwest Wind.* San Antonio 6: The Naylor Company, 918 N. St. Mary's Street, P. O. Box 1838. 1958. 174 pp., $3.50. A true flavor of the great Southwestern United States is to be gained from this collection of stories by Max Evans. Only two of these really memorable short stories have been published previously. The remainder are offered here for the first time. But, there is a strong chance that many of them will be printed again. All are outstanding candidates for selection in anyone's collection of the best short stories of this, or any, year. From the stirring tale of the talented musician of Marzal to the provoking story of the cowboy turned tournament golfer, there is something here for everyone.

Mr. Evans knows the country and the people he has written about. His knowledge is especially evident in his story of the enterprising wood hauler who came up with a fool-proof, if slightly dishonest, system for doubling his profits. The vastness of some of the great open spaces of the Southwest and the loneliness of the life led by many who tend cattle or sheep in this great emptiness is brought home with impact in one of these well-crafted stories.

FABER, DORIS. *The Wonderful Tumble of Timothy Smith.* New York 22: Alfred A. Knopf, 501 Madison Avenue. 1958. 92 pp., $2.50. Timothy tumbled out of the old apple tree, hurt his wrist, and there he was, an almost-nine-year-old boy who couldn't climb back up to the tree house. What a predicament! Everyone else was eventually grateful that Timothy fell out of the tree house because, when this nearly nine-year-old started to entertain himself on this summer day, it finally affected the whole town.

To pass the time, Timothy decided to build a telescope and, of course, he needed a book to tell him how. Timothy, his mother, and his nearly seven-year-old sister went to the town library, and from that moment on things really began to happen. Timothy ended up watching a big parade that was at least partly in his honor.

FELSEN, H. G. *Crash Club.* New York 22: Random House, Inc., 457 Madison Avenue. 1958. 286 pp., $2.95. So far, Raccoon Forks had been a lucky school. Its fads had been noisy, outlandish, expensive, silly; its leaders noble, buffoonish, flighty, and irritating. But it had been spared the destructive, damaging crazes that had seized students in other high schools. Indeed, the addiction to drag-racing gaudy cars was almost something to be thankful for.

And yet the current fad was doomed from the day "Outlaw" Galt transferred to Raccoon Forks. He not only usurped Mike Revere's position as "the best boy with the best car," and the girl who went with it, but also set off a struggle for prestige and leadership that was fought with cars. Racing gave way to recklessness; and "heroes" were measured by the depth of their road wounds. Where would the new fad end? That question troubled the principal of Raccoon Forks High. But how to regain his leadership and the affections of his girl was all that mattered to Mike Revere. He'd find a way.

FORSEE, AYLESA. *Louis Agassiz—Pied Piper of Science.* New York 22: The Viking Press, 625 Madison Avenue. 1958. 244 pp., $4. About a hundred and fifty years ago, the importance of the natural sciences in the scheme of our lives was not nearly so generally appreciated as it is today. At that time, a pastor living in a remote Swiss village wrote to his son Louis, a student at Heidelberg: "If it is absolutely essential to your happiness that

you should break the ice of the two poles to obtain the hair of a mammoth . . . at least begin . . . by reaching your first aim, a doctor's diploma."

Dutifully, if unhappily, Louis Agassiz obeyed. However, burning with an almost fanatical desire to become an ichthyologist and geologist, he also continued his research in these fields. He developed a magical personality which not only drew the attention of influential personages to his experiments but bewitched them into giving him practical encouragement as well. His book on fossil fishes opened up a vast new field for later scientists to explore and enlarge, and his observations from a hut on one of his native Swiss glaciers provided proof for his theory of the Ice Age.

FOSTER, JOANNA. *Pages, Pictures, and Print: A Book in the Making.* New York 17: Harcourt, Brace and Company, 750 Third Avenue. 1958. 96 pp., $2.95. In this account the reader follows a manuscript on its intricate journey in becoming a book: first to the editor in a publishing house, then through its revisions to final form, and on to the designers and production staff who plan its manufacture. The artist's studio where the illustrations are made, the printing plant, the bindery—all these, too, are visited. Every book, of course, begins with one person—the author—but before it is finally printed, bound, and ready for distribution, it involves dozens of people. This, then, is the story of those people and of a book in the making. After many months of work, the finished book is ready but must still be carried through its final steps of selling, advertising, and promotion before it reaches its ultimate goal —the reader.

FRAZIER, P. W. *Antarctic Assault.* New York 16: Dodd, Meade and Company, 432 Fourth Avenue. 1958. 251 pp., $4. As a member of the staff of Rear Admiral George Dufek, Commander Frazier participated personally in the struggle to build and supply stations on the remote wastes of the Antarctic Continent for the observations of scientific teams during the International Geophysical Year. This personal saga of modern Antarctic exploration begins as early as 1957 with Operation Windmill, which made the first assault against the ice and snow to establish ground control points, and continues through Operations Deep Freeze III in 1957, when the scientists were already at their work.

In a continuous race against time, the elements conspired to thwart every move, whether it was unloading life-supporting cargo against an ice shelf that tumbled great sections into the sea, or blazing a trail through hundreds of miles of treacherous hidden crevasses that claimed their toll of lives. The hostile terrain made even day-to-day existence dramatic for Dufek's Volunteers.

FREEMAN, D. S. *Lee of Virginia.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1958. 255 pp., $4.50. This is a life of Robert E. Lee written by a man who never met the General, but got to know him better than anyone else. Although Douglas Southall Freeman won the Pulitzer Prize for his four-volume life of Robert E. Lee, he did not feel he had said the last word on the hero of the Confederacy. Lee was ever on his mind while he was writing *Lee's Lieutenants* and planning the seven-volume biography of George Washington. This, too, won the Pulitzer prize.

Found among Freeman's papers after his death was this one-volume life of Lee designed for young adults. On this book he lavished the devotion which made the four-volume set a classic. The author could scarcely neglect Lee

the military genius, but it is Lee the man who comes to the fore—the Lee who was greatest in defeat.

GASS, IRENE, AND HERBERT WEINSTOCK. *Through an Opera Glass.* New York 16: Abelard-Schuman, 404 Fourth Avenue. 1958. 166 pp., $3. This is a history of opera from its origin in 1600: from Peri and Monteverdi to Lully and Purcell, then through Handel and Gluck to its zenith, and on through Verde, Wagner, and Puccini to the present day. Written with a light touch, the book is peppered with significant anecdotes about composers, singers, and performances, and descriptions of the varying behavior of opera audiences through the centuries. The operas of the great composers are given in detail, with synopses of some works which are still performed. There is a chapter on English and American Opera, then the final chapter "Opera Today," which reflects the revival of interest in opera and the outburst of new activity throughout the Western world.

GIOVANNETTI, P. L. *Beware of the Dog.* New York 11: Macmillan Company, 60 Fifth Avenue. 1958. Unpaged. $3.50. In this book, the author turns his attention to man's best friend—the dog. In forty-some caricatures, with French and English captions, he conveys the quirks and crochets of Dog. Other books by this author include *Max, Max Presents,* and *Hamid of Aleppo.*

GRAY, J. D., AND J. R. JACKSON. *Leadership Training and Parliamentary Procedure for FFA.* New York 11: Prentice-Hall, 70 Fifth Avenue. 1958. 128 pp., $1.68. The public school system has the responsibility of training leaders for the community, state, and nation. As a part of this school system, teachers of vocational agriculture are increasing their efforts to meet this responsibility within chapters of the Future Farmers of America. This book is designed to provide ample reference material for the leadership training program of the FFA chapter.

The first part deals with the organization of the FFA chapter. It outlines the qualifications necessary for each office and provides the essential information that each officer needs to fulfill his duties. The second part is a manual of parliamentary procedure, organized for easy understanding. Extensive examples for each parliamentary rule illustrate how parliamentary rules and language are used in the FFA chapter meeting. Study questions are provided to give FFA members additional experience in handling parliamentary problems.

This book will assist individual FFA members to develop their leadership capabilities and show FFA chapters the proper methods of transacting business during chapter meetings. More important, it will help teachers of vocational agriculture in training FFA members to become good leaders within their chapter and community.

Guide to Teaching Health, Physical Education, and Recreation. Minneapolis 13: Minneapolis Public Schools, Administration Building, 807 N. E. Broadway. 1958. 313 pp. $4. The end result of a number of years of work by a large group of Minneapolis Public School people in that area under the direction of Dr. Helen M. Starr, Director of Health, Physical Education and Recreation. The program outlined in this Guide has been tried out in a number of pilot schools and rooms.

HEINEY, D. M. *Recent American Literature.* Great Neck, New York: Barron's Educational Series, Inc., 343 Great Neck Road. 1958. 600 pp. Paper, $1.95; cloth $3.95. A companion volume to the author's successful *Contemporary Literature,* this new work provides a concise but complete hand-

book of modern American literature for use both as a textbook and a source of ready reference information. The era covered is roughly the twentieth century, although the book begins with the generation of James, Howells, and Crane in order to include an introduction to the mainstream of American realism. This book, compiled for the most part from standard sources and reflecting the judgment of established critical opinion, will provide a valuable aid to the student, the teacher, the critic, the reviewer, and others whose daily business requires a convenient source of information on modern American writing.

Over 100 modern American authors are treated in detail in this volume. Literary criticism is treated in a separate section which includes detailed discussion of such movements as the New Humanism and the New Criticism.

The discussion of each author begins with a critical summary of his position in American letters, the specific qualities of his style, and the techniques, themes, devices, attitudes, and philosophical currents most often noted in his work. Next follows a biographical sketch in which the chief facts of the author's life, especially as they bear upon the nature of his work, are presented in concise form. Finally, the book presents summaries or analyses of the more important works of each author, intended to serve chiefly as a source of reference for the names of characters, details of plot, and general characteristics of a work.

HEINLEIN, R. A. *Have Space Suite—Will Travel.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1958. 284 pp., $2.95. "You see I had this space suit. . . ." Kip had come into possession of the space suit in an absurdly amusing way. It wasn't exactly the latest model, but he found it "like a fine car, its helmet like a Swiss watch." His home efforts to repair the suit resulted in travel much more startling than the mere trip to the moon that he expected to make. On the way—also in a strange but hardly amusing situation—Kip meets Peewee, a genius child of ten, who from then on shares his adventures and is, with him, involved in an interspatial cold war of mind-stretching dimensions. Again we meet strangely delightful non-human creatures. Friends of Willis, the Martian Bouncer, in *Red Planet* will not be disappointed.

HOIG, STAN. *The Humor of the American Cowboy.* Caldwell, Idaho: The Caxton Printers Ltd. 1958. 193 pp., $5. In the days of the American frontier, the pioneers had to depend upon their own resourcesfulness of entertainment and for relaxation from the rigors of primitive living. The American cowboy was no exception, and when it came to dreaming up tall tales, spinning yarns, and painting amusing word pictures, he was second to none.

To the cowboy, humor was a real and everyday thing. He used it to express his fondness for the West, to exchange sarcasms with the railroaders, to teach the lessons of the West to the immigrant tenderfoot, and even—sometimes—to laugh at death. To him the world was a circus of creation—nature, food, tenderfeet, romance, wealth, the animals he associated with, even he himself—nothing was beyond the scope of his laughter. And for this reason the author ranks this "jes' plain bow-legged human" as one of America's best native humorists.

HYDE, M. O. *From Submarines to Satellites.* New York 36: McGraw-Hill Book Company, Inc., 330 W. 42nd Street. 1958. 107 pp., $3.50. Electronic communications faster than thought, jets that fly faster than sound, radar

that spots hurricanes and predicts flash floods—these are just a few of the developments that have grown out of the combined efforts of the armed forces and industry working for our national defense. The many dramatic advances in science that sooner or later affect the everyday lives of us all are highlighted in this unusual survey prepared by a well-known science educator and author with the full cooperation of the Army, the Navy, and the Air Force.

The DEW line (Distant Early Warning), the most recent carriers, the latest cruisers, submarines, rockets, and airplanes are all discussed. Thousands of opportunities for training in the various branches of the Armed Forces—in aviation, electronics, photography, engineering, and related fields—are pointed out.

JENKINS, C. J. *Practical Chemistry for Schools.* New York 22: Cambridge University Press, 32 East 57th Street. 1958. 222 pp., $1.75. The work involved in organizing and conducting practical exercises in chemistry can be heavy, and often this is coupled with inadequate laboratory assistance. Also, the time which is available for any particular exercise is always limited and is often found to be insufficient for the work to be completed satisfactorily. In these circumstances, all legitimate devices for economizing labor and saving time are to be recommended. The book has been written bearing this in mind. In addition, every endeavor has been made to make the subject interesting for the pupil and easy for the teacher.

The method adopted with work of a qualitative or descriptive nature is to give a series of simple instructions for performing the experiment and then either to ask for the results in the form of a table or to set a series of short simple questions based on the experiment. In most cases the questions are susceptible of single-sentence answers which are intended to provide an account of the work. Both instructions and questions are numbered for ease of reference and clearness of exposition.

The method of asking questions based on the experiment has, of course, always been adopted by teachers of chemistry. Teachers should find it of advantage to have questions and diagrams printed for each pupil, so that the labor of putting them on the blackboard is avoided and the time thus saved made available for other purposes. In most cases, the results of practical work can be written up directly at the bench.

KANE, H. T. *The Southern Christmas Book.* New York 18: David McKay Co., Inc., 119 West 40th Street. 1958. 347 pp., $4.95. This is Christmas as seen in the whole South—early and late, old and new, a magnificent but sharply detailed panorama. Living in the South, talking with friends throughout the area, studying family and public documents and records, Mr. Kane has gathered through the years an impressive collection of material on Southern Christmas customs. He now puts it together in a book of warm eloquence.

Here is Christmas and the New Year season as taken from the lives and hearts of the people of the American South—Virginia's hearty Christmas, the zestful Creole holiday of New Orleans, the touching Christmas customs of the North Carolina Moravians, the holiday season in frontier Kentucky and Tennessee, Christmas on the plantations of Georgia, Alabama, and South Carolina before the Civil War, the riproaring "cowboy" Christmas of the Texas pioneers, the German Christmas of Baltimore when turkey came served with sauerkraut, the February Christmas of the isolated trappers of Louisiana, and the devout holidays of the Spanish-speaking people of the Southwest.

KELLER, ALLAN. *Thunder at Harper's Ferry.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1958. 288 pp., $4.95. A stern command, spoken on a chill, rain-swept afternoon in October 1859, began the ill-fated raid at Harper's Ferry, which stirred and inflamed this nation as few events have done. Here is the complete story of the momentous days following these words, when in a hollow of the Blue Ridge Mountains of Virginia, John Brown and twenty-one men acted out a violent drama that carried the country closer to Civil War.

The titanic, Old Testament figure of John Brown, prophet, idealist, revolutionary, strides across these pages, with the handfull of men, including his three sons, who followed him in his abortive attempt to free the slaves: his three sons . . . John Henry Kagi, the fiery ex-schoolmaster . . . Stewart Taylor, the spiritualist who foresaw his death in the raid . . . William H. Leeman, gay, handsome—killed with his commission as a captain in Brown's Army still in his pocket . . . and the others who found History waiting for them on that gray October day.

These men—their hopes, fears, and prayers—are your companions through these fateful three days, recounted with an experienced journalist's eye for truth, drama, and eyewitness detail. The small triangle of river-framed land they fought over—the Wager Hotel, the Galt Saloon, the rifle factory, the enginehouse where John Brown finally surrendered—becomes as familiar to you as your own neighborhood and living room. So vividly does the author reproduce the background events that you are rewarded with an intimate understanding of the issues and feelings that divided our country on the eve of its great civil conflict.

Know Your Elementary Schools, A Handbook for Parents. Minneapolis 13: Minneapolis Public Schools, Administration Building, 807 N. E. Broadway. 1958. 58 pp. 50¢. A publication produced under the direction of Mildred Carlson, Consultant in Curriculum, and a committee of Minneapolis school personnel and parents under the leadership of Vernon E. Indehar, Principal of Lowell School. All parents of elementary children received copies of this Handbook, this fall, in a very carefully arranged presentation plan.

LIGGETT, THOMAS. *The Hollow.* New York 11: The Holiday House, 8 W. 13th Street. 1958. 237 pp., $2.95. "They'll bust you like a dime-store toy," was what the probation officer told defiant Al Ferris while taking him to the county work camp. This story is Al's answer to that threat.

It was a camp out West, in pine-clad mountains, but the hapless inmates scarcely were aware of the scenery. In mockery of the hard-boiled director, Hollobeck, they called the place "The Hollow." They are vivid characters: Mexican, Indian, Negro, as well as white. They jive, work, play, clown, fight, scheme, and dream through the dramatic action. Without resort to shock for its own sake, the story is alive with harsh but honest realism. All the narrating is done from Al's own standpoint so that readers will know how it feels to be in his place.

LOBSENZ, N. M. *Emergency!* New York 18: David McKay Company, Inc. 119 West 40th Street. 1958. 278 pp., $3.95. Strange things happen in New York City—sad, funny, dangerous, terrible things. A man climbs on a bridge tower and threatens to jump. A woman falls under a subway train. A bartender gets his hand caught in a cash register. A lizard is loose in a Brooklyn back yard. A child gets stuck in a subway turnstile. A plane crashes, convicts riot, buildings collapse, gas leaks silently—these things go on beneath

the city's surface twenty-four hours a day, every day of the week. This book is the story of these emergencies and the specially picked group of men whose job it is to cope with them—the Emergency Service Division of the New York City Police Department, a highly trained unit whose courage and know-how are constantly on call by the millions of people in New York.

MASTERS, R. V., AND FRED REINFELD. *Coinometry.* New York 16: Sterling Publishing Company, Inc., 419 Fourth Avenue. 1958. 94 pp. (9¾ x 8½") $3.50. This book introduces you to the hobby of coin collecting, a hobby that can provide a lifetime of enjoyment and prove profitable as well. Across the pages of this book jingle hundreds of coins, from the unusual "Tree Money" of Malacca and the huge stone money of Yap, down to the first coins issued by the new United States of America and all the way through the history of our coinage to our modern small size dollar and recent coins. There are so many United States coins listed in this book that you'll have your choice in selecting coins for your collection. There is the famous Fugio Cent (1787) called that from the inscription by Benjamin Franklin meaning, "I fly," which is what money does when business is brisk. The Lincoln penny which was our first portrait coin, the much-praised Indian Head penny (1859) for which the 12-year old daughter of the Chief Engraver of the Mint posed, or even more recent coins like the Liberty nickel discontinued in 1912, its successor the Buffalo nickel, the Roosevelt dime, or the McKinley Memorial dollar all make fine additions to a young collector's new hobby. For the serious collector, there is an up-to-date price list of all United States coins.

Highlighting the pictures on coins, this book with its hundreds of coin photographs, drawings, and diagrams recreates important moments in American history commemorated in coin: the voyage of Columbus, the battle of Lexington-Concord, the landing of the Pilgrims, the Battle of Antietam during the Civil War, and America about to go to war in World War I. Here too are the little-known stories of such famous coins as the Pine Tree Shilling, the China Trade Dollars, and the highly prized 1849 "double eagle," valued at $40,000!

MAY, JULIAN. *There's Adventure in Rockets.* Chicago 11: Popular Mechanics Press, 200 East Ontario. 1958. 192 pp., $2.95. This book explains the fundamentals of rocketry and space exploration and places importance on the safety factors which must be used in amateur experiments. In an explanation of the workings of the Air Force test center for missiles at Cape Canaveral, the extreme safety precautions used by professionals are stressed.

McCORMICK, WILFRED. *The Bigger Game.* New York 18: David McKay Company, Inc., 119 West 40th Street. 1958. 188 pp. $3. Rocky McCune tries desperately to regain control of a team that has lost faith in him as a coach. By winning the championship of their high-school conference, as told in *The Captive Coach*, Rocky's team has been selected to meet the New York champions in a game arranged by the Creager Educational Foundation primarily for testing purposes—to study the emotional and ethical effects of athletics on scholarship. Rocky is caught in a serious web of circumstances when he is required secretly to assist the educators, apparently at the expense of his team, which finds itself bewildered and overmatched in fabulous Yankee Stadium.

McDONALD, LUCILE, AND Z. H. ROSS. *The Courting of Ann Maria.* New York 17: Thomas Nelson and Sons, 19 E. 47th Street. 1958. 192 pp., $2.95. A girl in her teens could expect to have plenty of proposals in Oregon

Territory in 1850, for the Land Donation Act gave a bachelor 320 acres of free land while a married man was entitled to a claim of twice that size. Ann Maria Cherryhome resolved that she would not be traded in marriage for a parcel of land. When she heard flashy, foreign-looking Gabriel La Plante ask her father for her hand, she was furious; she'd never met the man and his obvious greed for land was brazen. Pa said she was too ready to speak up in meeting; if her mother hadn't been expecting a baby, if they could spare Ann Maria, he'd encourage Gabriel's courtship. He meant it, too, for Pa made the decisions for his family.

But Ann Maria was falling in love with Hugh Conway, a young Englishman, and that added coals to the fire of her father's anger. Pa couldn't abide the British. Was it because he was living on land he'd usurped from them, land from which he could be evicted?

Gabriel continued to call on the Cherryhomes, welcomed by all but Ann Maria; to her, his attentions had become doubly unwelcome for she had reason to suspect that he was involved with his cousin and an unscrupulous settler in stealing cattle from the British. As for Hugh, Ann Maria sympathized with his justifiable resentment of the Americans; would she be disloyal to her own people if she married him?

Her problems came to a climax when her father rushed north with a party of gold prospectors, leaving her in charge of the farm, to worry about eviction, illness in the family—and the future. How Ann Maria met the challenges of pioneer life and chose between her suitors is told with warmth and humor by two favorite authors of novels for older girls.

MORGAN, W. D., *et al. Graphic Graflex Photography For Prize Winning Pictures.* New York 17: Morgan and Morgan, Inc., 101 Park Avenue. 1958. 256 pp. (7½" x 10"), $6.95. This all-new 11th edition for prize winning pictures is published with the latest authoritative information on how to make top-notch, prize-calibre pictures all the time, either for amateur use or professional sale. Sixteen contributing editors, leading photographic experts, describe in their own words and successful pictures how to make consistently more satisfying and more saleable photographs of every kind. They include portraits, outdoor shots, studio, industrial, fashion, advertising, newspaper, school yearbook, travel, aerial, babies, children and pets, birds, police work, copying and close-ups, and of course, color pictures. The 17 chapters also include basic information on regular and electronic flash, films, filters, exposure, developing, printing, enlarging, lighting, and the use of all types of cameras from 35mm to twin-lens reflex, single-lens reflex, press and view cameras, as well as accessories, projection equipment, *etc.* A special 32-page picture portfolio of prize-calibre photographs in breathtaking color as well as black-and-white, shows the simple elements of fine pictures, and successful results to strive for and achieve. The book has over 360 fine photographs, many useful tables, charts and diagrams, and 16 pages in full color.

MORRIS, JAMES. *Coronation Everest.* New York 10: E. P. Dutton and Company, 300 Fourth Avenue. 1958. 146 pp., $3.75. On the eve of Queen Elizabeth's Coronation, the news reached London that Everest had been climbed. Of all the Coronation gifts, this was the most glittering. The huge crowds, waiting all night in the drizzly streets, cheered and sang when they heard, and newspaper editors hurriedly remade their editions. In Buckingham Palace, the Queen learnt of the triumph "It helped us to sleep that night," remarked the Duke of Edinburgh, "—what little sleep we got!" Within

minutes the news was around the world, and an extraordinary wave of delight and excitement ran across the continents. In a million hearts, everywhere, the announcement of the great ascent struck a spark of especial pride that Coronation morning.

This is the story of the news from Everest and of how it traveled from the summit of the mountain to England in time to coincide so miraculously with the day of celebration. There have perhaps been greater adventures than Everest; but none have culminated so romantically—the two small figures on the summit linked by such devious means with the trumpets, the gold coaches, the splendid gowns, the heralds, and all the pomp and ceremony of Coronation London. Drake himself could not have timed his gallantries more grandly.

MORSE, CAROL. *Carnival Cruise.* New York 18: Ives Washburn, Inc., 119 West 40th Street. 1958. 191 pp., $2.95. When the Mt. Ivy High School band was offered a spring cruise to the little Caribbean island of Toluca, paid for by a big company in its northeastern inland town as a reward for winning the state championship, the door to a whole new world opened for the eighty lucky boys and girls. Poppy Barnes and her best friend, Jan, strictly disciplined Eve Gately, and rather mysterious but attractive Henry Stearns prepared with the other band members to enjoy all the fun such a cruise could offer, and to explore this sun-drenched island in the tropics at carnival time.

NELSON, MARG. *Valiant Venture.* New York 18: Ives Washburn, Inc., 119 West 40th Street. 1958. 192 pp., $2.95. Dean Meadows, just graduated from high school, and his younger brother, Larry, were dismayed to find the *Valiant*, their Uncle Han's fishing boat on which they were to spend the summer, tied to the dock in a sadly neglected state when they arrived on the Washington coast from their home in Ohio. For some mysterious reason, salty old Uncle Hans, who had offered to give Dean a job while his mother recovered her health in a sanitarium, seemed as unready as his boat to go fishing.

Dean held a poor opinion of fishing as a way of life, especially since he had to give up a college scholarship to become the man of the family. However, he had determined to do his best to earn some money abroad the *Valiant* for his mother, Larry, and himself. He soon found out there was a great deal more to commercial fishing than a pleasant boat ride, throwing a line over the side, and duly pulling in a fish. Obviously, the first step was to persuade Uncle Hans to put the boat in shape and get fishing.

An Overview of the Elementary School Curriculum (K - Gr. 6). Minneapolis 13: Minneapolis Public Schools, Administration Building, 807 N. E. Broadway. 1958. 61 pp. $1. A revision of the previous printing of this title. Mable Melby, Consultant in Curriculum, was chairman of a committee of consultants who prepared the manuscript for this publication.

PARADIS, A. A. *Americans at Work.* New York 18: David McKay Company, Inc., 119 West 40th Street. 1958. 223 pp., $3.50. This is a discussion of the American system, how it has been affected by the rise of new industries and the development of old, and—most of all—the people who have fashioned the American way of life. The book points out too, for the career-minded young reader, the opportunities that exist in almost every field of endeavor, particularly for those with ingenuity, ability, and ambition.

The roster of personalities and industries is an unusually interesting one. In the story of Frederick Kappel, president of the American Telephone and Telegraph Company, the importance of communications to society and to

national defense is brought home. The story of the automobile, which changed our living habits, makes exciting reading, as does the story of two men whose names are synonymous with that industry: Harlow Curtice, president of General Motors and Lester Bolber, president of the Chrysler Corporation. Then there is Keith Funston, president of the New York Stock Exchange, and the account of the campaign to broaden public ownership of business; Charles Merrill of Merrill Lynch, Pierce, Fenner, and Smith and the effort being made to bring Wall Street to the average citizen. There is the heart-warming adventure of a man and a newspaper—Louis Seltzer, symbol of the very essence of the American system, and the *Cleveland Press*, a potent force for civic improvement.

Nor are the ladies overlooked: Oliver Beech, president of Beech Aircraft Corporation; Jennie Grossinger of Grossinger's, a new concept in resort hotel management; Margaret Rudkin, president of Pepperidge Farm, Inc., who turned the baking of bread into a fabulous business; Engineer Beatrice A. Hicks, president of the Newark Controls Company.

PEARE, C. O. *A Scientist of Two Worlds: Louis Agassiz.* Philadelphia 5: J. B. Lippincott Co., E. Washington Square. 1958. 188 pp., $3. From the time Louis Agassiz was a small boy, he was fascinated by animals and flowers and all growing, living things that surrounded him in his Swiss home. His great desire was to become a naturalist, but his father had other plans. Louis was persuaded to study medicine. Finally, however, he achieved his goal and became a student of natural history.

In Germany, in France, and in his own Switzerland he soon became famous. Word of his study of fossil fishes and of his Ice Age theory spread to England and to the United States. The last half of his life was spent here. In 1884, he became professor of zoology at Harvard and, due to his instruction there, natural history study in his country was revolutionized.

Catherine Peare has written an absorbing story of a great scientist and teacher. She brings to her reader a vivid picture of Agassiz's dynamic personality and his concentration on the acquisition of knowledge in his chosen field. Here is a scientist dedicated to his subject and to the teaching of it to anyone who wishes to learn.

PEART, HENDRY. *The Loyal Grenvilles.* New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1958. 217 pp., $3. Young Strafford, the heir to the estate and title of Grenville, was a stalwart Royalist, which in the days of Oliver Cromwell was not only a dangerous position, but a criminal one in the eyes of the ruling Puritans. Strafford and his younger brother, Lovel, refused to accept the enforced Puritan rule. When Sir Anthony, a just and honest man, married their older sister and became the head of the family and the boys' protector, Strafford and Lovel could not peaceably obey him because he was one of the hated Puritans. Their rebellion against Sir Anthony's authority led to a series of adventures—the young Grenvilles' own private civil war.

Strafford and Lovel, taunted by an absessed Puritan tutor, finally fled from Sir Anthony's home where they considered themselves prisoners. They eventually helped their outlawed Royalist renegade uncle to escape from a Puritan prison. After many family disputes, Sir Anthony and Strafford reach an understanding of each other that proves a basis for mutual trust and respect.

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PELLA, M. O., AND A. G. WOOD. *Physical Science for Progress.* Englewood Cliffs, New Jersey: Prentice-Hall. 1959. 527 pp., $4.80. *Physical Science for Progress* is developed around basic principles of physics, chemistry, astronomy, and physical geography. The principles of science included are those the authors have found to be within the range of average students who are not enrolled in physics and chemistry courses. This course is intended to serve a dual purpose—as a terminal course for some students and as a preliminary course for those who need added experience in science before they enroll in physics and chemistry courses.

Major emphasis is given to the qualitative aspects of science. Quantitative concepts are included when they are essential to the understanding of qualitative concepts. The principles of the various branches of physical science are fused in such a way that each principle and the relationship among principles will be more completely understood.

The approach varies with the type of material being presented. The historical approach is used in Units 1, 2, and 3. The inductive approach is used in the narrative text and activities throughout the remaining units. The purpose is first to help the student establish a fact and then to explain the fact. Each activity has been carefully selected to contribute to the desired understanding.

Attention is given to the development of scientific attitudes through a sequential presentation of evidence. Understanding of the use of the scientific method grows through practical applications in carrying out the activities. Since the content of this book is cumulative, the teacher will profit by following the sequence of the text.

The book contains about 750 illustrations, all of which are closely integrated with the text material. Many of them help the student see the processes involved in carrying out the activities, as well as the results. Though intended primarily to supplement these laboratory or demonstration activities, they may be used independently to explain principles and processes as they are being discussed in class. Throughout the book emphasis is given to the role played by principles of science in the student's everyday environment.

POOLE, LYNN. *Ballooning in the Space Age.* New York 36: McGraw-Hill Book Company, Inc., 330 W. 42nd Street. 1958. 160 pp., $3. Balloon flights are back on the front pages, and a big program is planned for the use of balloons in the future. Rockets and satellites in orbit travel at tremendous speeds—much too fast to collect all the facts concerning cosmic rays, meteorites, temperatures in outer space, *etc.*, that must be thoroughly understood before men can take flights into space.

In this book, Lynn Poole, well-known author and producer of the very successful Johns Hopkins television science programs, tells about balloon ascensions of the future, and feats past and present. The flights of the Montgolfiers, the Piccards, Colonel Simons, Commander Ross, Blachard, Jeffries, Coxwell, Glaisher, Gray, Settle—are all vividly related by the author. He describes various balloons, shows how these strato laboratories work, recounts stories of recent balloon trips. And he forecasts the role balloonists will play in tomorrow's spaceways. The book is dramatically illustrated with authentic black-and-white drawings.

PULLEN-THOMPSON, DIANA. *The Boy and the Donkey.* New York 10: Criterion Books, Inc. 257 Fourth Avenue. 1958. 190 pp., $3.50. Duggie Brown's adventures began the day he met Old Jock, the rag-and-bone man,

and his small gray donkey, Tam O'Shanter—Tammy for short. Duggie lived in a poor part of London, in an overcrowded house which his family shared with other people. Life hadn't held much excitement up to then; but when Old Jock became ill and Duggie was left to look after Tammy, he discovered a new, completely absorbing interest.

And then Duggie heard about the Donkey Derby, a race that was held in the country every summer. He knew at once that he would never be satisfied until he himself entered the Derby, as Tammy's jockey. But this ambition was not easy to fulfill. For one thing, there was the entrance fee to be found . . . and then there were the sabotaging activities of a gang of boys who had declared war on Duggie and his friends.

REEVES, JAMES, editor. *A Golden Land.* New York 22: Hastings House, 151 E. 50th Street. 1958. 512 pp., $5.50. This is a book of stories, poems, pictures, and songs for children. Among the stories are some which are out of print but deserve to regain their popularity as well as some which are quite new. The poems vary from traditional rhymes to lyrics by contemporary poets. Readers will find the old and well-loved names—Aesop, Hans Anderson, Joel Chandler Harris—alongside their later descendants—Kipling, de la Mare, A. A. Milne—and the very latest recruits to the great profession of story-tellers, English and American. Variety of subject, of mood, and of style will delight children of the most assorted tastes.

Gillian Conway, the principal illustrator, has contributed a wealth of drawings which, in their liveliness and variety, conjure up the many different atmospheres evoked by the stories and poems. There are also complete picture-tales as well as other illustrations by the most distinguished children's artists, Edward Ardizzone, Violet Drummond, L. Leslie Brooke, and many others both new and established.

RENAULT, MARY. *The King Must Die.* New York 14: Pantheon Books, Inc., 333 Sixth Avenue. 1958. 346 pp., $4.50. One of legend and history, the author in her novel tells the story of Theseus, slayer of monsters, abductor of princesses, King of Athens. Under the fanciful garnish of myth, she has discerned what may well be the truth: the impact of a magnetic personality with the gift of leadership and a sense of destiny, sent to destroy the matriarchal pattern of Eleusis and Crete. Theseus emerges as a clearly defined personality, convincing in every detail: a man brave and aggressive, tough and quick, and touchily proud. His adventures follow the myth closely; yet, in spite of their high color and drama, they are fully credible.

The core and climax of the novel is the Cretan adventure. This most fantastic-sounding part of the Theseus legend has been linked to fact by the uncovering of the Palace of Knossos with its labyrinthine complexity and numerous representations of young men somersaulting over the backs of charging bulls while young girls stand ready to catch them.

REYNOLDS, JESSICA. *Jessica's Journal.* New York 17: Henry Holt and Company, Inc., 383 Madison Avenue. 1958. 191 pp., $3. The author gives an observant, amusing account of a year's voyage from Hawaii to New Zealand on her family's 50-foot yacht, *The Phoenix.* Aboard with Jessica are her mother, Skip her father, her older brother seventeen-year-old Ted, three Japanese crew members, and Mi-ke the cat.

Life aboard grows very real through Jessica's account of deck swabbing, concocting meals from canned food, sighting dolphins in the water, doing home work assigned by Mom, and playing with Mi-ke. Life ashore, too, is a

colorful panorama with Jessica's impressions of island sights, people and their customs, her experiences at school in Bora Bora, and how she learned the hula-hula in Tahiti.

RICH, L. D. *The Peninsula.* Philadelphia 5: J. B. Lippincott Company, E. Washington Square. 1958. 281 pp., $4.50. When Louise Dickinson Rich was offered a cabin on Gouldsboro Penninsula in Maine, she took it sight unseen and fell in love with what she found. Now she writes about it in a gay, humorous, and thoughtful book. Her peninsula is characteristic of the Maine coast—rocky, bare, and sea-swept. Less characteristic is the fact that there are few summer people so far, and the inhabitants, mostly old stock who have been there for generations, enjoy a way of life that is becoming rare in New England or anywhere else.

Once there was more economic diversification than there is now—farming, sawmills, lime, even a silver mine. Today the work is limited mostly to lobstering and fishing. There's a lot about lobsters and the lobstermen, whom Mrs. Rich greatly admires for their courage and ingenuity. Their livelihood is dependent upon the weather; their boats in hazard to storm and fog.

She has a chapter on the picturesque language derived partly from the sea, including odd place names and unfamiliar Christian names—Corydon, Evory, Harvard, Gideon. There's another chapter on local food and cooking. The whole book abounds in anecdotes, personalities, and the varied social activities of the places.

ROSMOND, BABETTE, editor. *Seventeen's Stories.* Philadelphia 5: J. B. Lippincott Company, E. Washington Square. 1958. 253 pp., $3.50. Here, from the pages of *Seventeen Magazine,* are thirteen outstanding short stories. Individually they cover a wide range in mood, setting, and style, but together they form a remarkably vivid and sensitive portrait of modern youth which makes absorbing, provocative reading for any age.

In addition to such familiar figures as the American high-school boys of "The Weird Sisters," the reader will meet Miranda, a Spanish peasant, in "Next to Godliness," and Elsie, the appealing, troubled twelve-year-old Irish girl in "One of the Family," as well as young people from India, China, and an American Indian reservation. Almost every facet of adolescent experience is reflected in these stories, from school and family problems to dating and young love. Sometimes, as with the college bull sessions in "Junior Year Is Dull," the point is carried with a witty insouciance, and sometimes the mood is poignant or tragic. Always, however, the observation is sharp, the insights true and illuminating, the sympathy and understanding deep.

SAVAGE, KATHARINE. *The Story of the Second World War.* New York 3: Henry Z. Walck, Inc., 101 Fifth Avenue. 1958. 271 pp., $4. Sunday, December 7, 1941. . . . our Pacific fleet was a mass of twisted metal in Pearl Harbor. . . . Japan was in control of the Pacific waters . . . the United States was at war. How did it happen? Why did it happen? You will find many of the answers as you read this book. Beginning with the rise of Hitler in a bitter and defeated Germany, you will see how his strength at that time is bolstered by Mussolini; you will see the strange alliances that pit power against power; you will watch as Austria, Czechoslovakia, and Poland fall under the goose-stepping boot of the German Army. Then on September 3, 1939, you will hear the first eerie air raid siren as Prime Minister Chamberlain announces that Great Britain and France are at war with Nazi Germany.

SCHIFFER, DON. *The First Book of Football.* New York 21: Franklin Watts, Inc., 699 Madison Avenue. 1958. 66 pp., $1.95. Football is an exciting game, both to play and to watch, and the more a person understands its basic points, the more he will enjoy it. This book is a book for beginners—either players or watchers. What is the object of the game? What is the field like? How many people play? What skills do they need? What does each player do? How do players score? How do they know what plays to make? What are the principal rules? Who decides the plays? What is good football strategy? How can a beginner become a football player? What position should he try for? These are a few of the questions for which this book furnishes answers.

SCHLOAT, JR. G. W. *Andy's Wonderful Telescope.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1958. 48 pp., $2.75. Andy, like many others today, has a telescope in his back yard. Through it he can see many wonderful things. This book tells what he sees, and something about the universe. It also explains, simply and pictorially, how the telescope was developed and the principles of reflecting and refracting telescopes. To explain in words is one thing, but this book also explains in pictures, step by step.

SCHNEIDER, LEO. *Lifeline: The Story of Your Circulatory System.* New York 17: Harcourt, Brace and Company, 750 Third Avenue. 1958. 127 pp., $2.95. In direct, concise terms Mr. Schneider, a science teacher of wide experience, describes one of the most important systems in the human body. Our blood and what it is made of, the way in which it circulates, its function as a transportation system for food and waste, its defense action against infection, the way in which "borrowed" blood now saves thousands of lives every year—these are some of the many topics included in this comprehensive account.

SHERIDAN, R. B. *The School for Scandal.* Great Neck, New York: Barron's Educational Series, Inc., 343 Great Neck Road. 1958. 172 pp. Cloth $1; paper 65¢. The introductory material of this book provides the reader with a biographical sketch of the playwright. This is followed by a discussion of the play and, in addition, a description of the original staging, the costuming, and the general theatrical conventions of the period in which the play was first produced. Running through the text are descriptions of settings, characters, and stage business, which are accompanied by pen-and-ink sketches of individual characters and scenes. More than that, as in published editions of the most modern plays, reading and acting guides have been interpolated.

Other theatre classics included in this new series of English dramatics masterpieces are: *She Stoops To Conquer* by Oliver Goldsmith (160 pp.); *The Rivals* by Richard Brindsley Sheridan (176 pp.); *The Way of the World* by William Congreve (192 pp.); *The Importance of Being Earnest* by Oscar Wilde (190 pp.); and *Volpone* by Ben Jonson (228 pp.). The prices of each volume is $2 cloth; 65¢ paper.

SHUTE, NEVIL. *The Rainbow and the Rose.* New York 16: William Morrow and Company, Inc., 425 Fourth Avenue. 1958. 318 pp., $3.95. This is the story of a seasoned pilot whose desperate crash-landing on the Tasmanian coast brings into play actions and emotions that span a lifetime. He is Johnnie Pascoe, a born flyer who has been piloting aircraft since 1916. Now Pascoe lies critically injured, without proper medical attention, and time is running out. Ronnie Clarke, a man whom Pascoe himself had taught to fly, volunteers for the suicidal mission of flying in a doctor—through rough weather along a treacherous, unmapped coast.

For two harrowing days, Clarke's entire being is concentrated on Pascoe—on the physical hazards of flight, and on a strange spiritual flight in which his own memories and intuitions reconstruct Pascoe's career, his private life mingled with public events. From the daredevil days of World War I to this final crack-up in his own small Austen, Pascoe's life has been a medley of planes and pilots, of routes and landing fields that epitomize the course of twentieth century aviation.

SLOBODKIN, LOUIS. *The First Book of Drawing.* New York 21: Franklin Watts, Inc., 699 Madison Avenue. 1958. 68 pp., $1.95. By means of text and original drawings, a famous artist and sculptor points the way to good drawing for beginners, and also for those artists-on-their-way who realize the need for a sound grounding in the techniques of their art. Beginning with a chapter on seeing and drawing the shapes of things, the artist-author discusses human and animal anatomy, movement, perspective, and materials and tools for drawing. Mr. Slobodkin devotes the second half of his book to detailed instruction in pencil, pen and ink, charcoal, pastel, Conte, or dry crayon, and brush drawing. He demonstrates each step, from preliminary sketch to finished work, with his own fine drawings.

STAPP, A. D. *Five Who Disappeared.* New York 16: Sterling Publishing Company, Inc., 419 Fourth Avenue. 1958. 224 pp., $2.95. When Russ Fleming and Arnie Jacobson discover a brook flowing upstream (contrary to the known laws of gravity), they instinctively sense that their two-week camping trip in the Olympic Mountains of Washington is at an end. What they do not realize at first is that this accidental discovery involves them inescapably in a history-making experiment being conducted in the area. What happens when Arnie and Russ decide to help the world-famous Vanderbergs complete their secret experiments on the use and harnessing of gravity makes for exceptionally fascinating reading.

Based on plausible scientific theory, the book explores the current frontiers of our knowledge. It may even describe, like the science-fiction masterpieces of Jules Verne, a scientific discovery not far from realization in the lifetime of the youngsters who read this story today as fiction.

STOUTENBURG, ADRIEN, AND L. N. BAKER. *Wild Treasure.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1958. 222 pp. $2.95. David Douglas was a Scottish botanist sent to America by the Royal Horticultural Society of London. He traveled on foot, on horseback, and by canoe through the wilds of the Oregon territory and over the Rocky Mountains, completely undaunted by difficulties. Always with him, sharing his hardships, was his Scottish terrier, Billy. A majestic and valuable tree—the Douglas fir—bears his name because he first took the seeds to Europe. Many of the plants in gardens all over the world today were discovered or introduced abroad by Douglas.

TANNENBAUM, BEULAH, AND MYRA STILLMAN. *Understanding Time.* New York 36: McGraw-Hill Book Company, 330 W. 42nd Street. 1958. 144 pp., $3. Modern man has been accused of "living by the clock," but consider how haphazard our days might be without a clock or calendar. How would trains or planes or sailings be scheduled? How would scientific experiments be gauged? The possibilities for confusion are limitless. All the highlights in the history of measuring time are covered in this fascinating book. It skillfully combines material on the science of clocks and calendars,

includes amusing anecdotes and legends related to them, and, through many "now try this" sections, tells the reader how to do interesting experiments.

Timepieces of the past—the water clock, sundial, the Nuremberg Egg—are explained and compared with today's methods of measuring time, including the "atomic clock." There is astronomy here, a discussion of the problems of establishing a uniform method of measuring time throughout the world, even a consideration of the theory of relativity—and many pages of accurate graphic drawings to add to the reader's understanding and enjoyment.

von HAGEN, V. W. *The Aztec: Man and Tribe.* New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1958. 240 pp., 50¢. An archaeological history of a people who created a rich and intricate culture in the heart of primitive Mexico.

WARNER, REX, translator. *Three Great Plays of Euripides.* New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1958. 192 pp., 75¢. The complete texts of *Medea*, *Hippolytus*, and *Helen*.

WELCH, RONALD. *Mohawk Valley.* New York 10: Criterion Books, Inc., 257 Fourth Avenue. 1958. 240 pp., $3.50. Disgraced by an accusation of having cheated at cards and expelled from Cambridge for having defended his honor with a dueling pistol, Alan Carey knew that the rebuilding of his life would be neither quick nor simple. He comes to the American colonies just twenty years before the battle of Bunker Hill to supervise his father's estate. In the rugged Mohawk country the young Welshman meets the demands of his new life, so different from his university days in England, by displaying not only physical prowess, but courage, modesty and the will—and ability—to learn.

His new friend, Jake Winter, backwoodsman and Indian scout, teaches him the secrets of survival in the beautiful but treacherous wilderness. His hard-won knowledge, great physical strength and skill as a wrestler, stand him in good stead when he falls into the hands of hostile Indians. And when the French and Indian War breaks out he takes part in the campaign and is active in the battle for Ticonderoga. Later he is able to provide a vital service to General Wolfe—and incidentally to prove his honor and courage to those of his friends who had doubted them. For this exciting and fascinating story of the early days in North America culminates in a thrilling account of the capture of Quevec, in which Alan plays a decisive role.

WHITE, DALE. *Steamboat Up the Missouri.* New York 22: The Viking Press, 625 Madison Avenue. 1958. 185 pp., $2.75. It was March 1863, months after volunteers had been called up for the Civil War, and Dave MacLaren decided that there wasn't another sixteen-year old in the whole of Missouri who was having more trouble. Here he was, six-foot-one in his stockings and as broad-chested as any man, and neither the Union Army nor Navy would sign him up. He was a cub pilot and could not be released from his license. Not even his father would help.

Douglas MacLaren, owner of a large estate and highly regarded by the Indians for his honesty, had trained his son to deal with many tribes, and he had plans for him to help his country in a special way. It was imperative that someone who was respected should reach and placate the tribes who were threatening to join the Sioux in an uprising that would draw Union forces away from the field of action.

Dave's father was determined to accomplish the mission and needed good, dependable men to help. When Dave learned what was in store for him, he was both overjoyed and a little frightened. Could he measure up?

WIGHTON, CHARLES, AND GUNTER PEIS. *Hitler's Spies and Saboteurs.* New York 17: Henry Holt and Company, Inc., 383 Madison Avenue. 1958. 285 pp., $3.95. Shortly after midnight on June 14, 1942, a German U-boat surfaced off the Long Island shore. Aboard was a crew that had brought the submarine across the Atlantic in sixteen suspenseful days, and four men who were prepared to sabotage power plants, railways, and bridges in a nation where once they had lived. These men were carrying out part of "Operation Pastorius," one of the crucial German espionage missions of World War II revealed in this authoritative book.

All of the dramatic episodes described here are based on an historic document: the diary kept between 1939 and 1943 by General Erwin von Lahousen, right-hand man to the German Secret Service Chief, Admiral Wilhelm Canaris. During those four eventful years, Lahousen maintained a careful record of the elaborate German schemes for espionage abroad. Although Lahousen appeared as a prominent witness for the Allied prosecution at Nurnberg in 1945, he did not disclose the existence of his diary until several years after the war. Only then, and during the years until his death in 1955, did Lahousen share these secrets with a young Austrian, Gunter Peis.

WILKES, E. T. *Family Guide to Teenage Health.* New York 10: The Ronald Press Company, 15 E. 26th Street. 1958. 262 pp., $4. In this book a well-known physician gives practical information and advice to parents and teenagers on the health and emotional problems of the years between twelve and twenty. The book provides for the all-important adolescent period the kind of home medical guidance that parents have come to take for granted with respect to infancy and childhood.

One of the pioneers in the study of teenage medical problems, Dr. Wilkes has learned from his own practice just what questions are likely to be most puzzling and disturbing. He discusses the nature and mechanisms of growth: what variations are normal; what can be done to help the short boy or tall girl; when and how to diet; what causes abnormal fatness or thinness.

WILSON, B. K. *Path-through-the-Woods.* New York 10: Criterion Books, Inc., 257 Fourth Avenue. 1958. 182 pp., $3.50. The title of this story for older girls is taken from one of the patchwork-quilt patterns used by our great-great-grandmothers. It centers around one such quilt, and takes us back to the days, about a hundred years ago, when each piece of material in it was fresh and unfaded. It is the story of a Victorian family living on the outskirts of London, and, in particular, of Sophie Fielding, the oldest daughter, who conceives the unheard-of notion of wanting to make a career for herself—as a lady doctor! Incredulity, ridicule, and blank opposition stand in her way, but she is determined to prove that a woman can make a place for herself in the medical profession.

ZISTEL, ERA. *Orphan, a Raccoon.* Skokie, Illinois: Rand McNally and Company, 8255 Central Park Avenue. 1958. 80 pp., $2.50. When the motherless, hungry little raccoon wandered out of the forest to the home of the people, a new and exciting life began for all of them. The woman and the man who lived in the house took in the little orphan, fed him, and gave him the love and warmth and companionship his baby heart craved. And as Orphan

settled down cozily with his new family, he quickly took his place as its most important member.

For Orphan was a raccoon with a personality. Playful, affectionate, inquisitive, and mischievous, his adventures were a constant source of amusement and consternation to his People. He deftly picked the man's pockets; he carefully washed the woman's gloves in his water dish; he twisted the knobs off the radio, and tried to dig the voice out of the telephone receiver. Never was the house so neat, for the man and woman learned that the only way to keep their possessions safe from Orphan's busy fingers was to lock them away.

Pamphlets for Teacher-Pupil Use

DAVIS, WATSON. *The Rise of Science Understanding.* Washington 6, D. C.: Science Service, 1719 N Street, N. W. 1958 (Sept.) 15 pp. An overview of the advance of science understanding and a brief history of Science Service.

Desirable Policies for the Certification of Teachers. Washington 6, D. C.: Council on Cooperation in Teacher Education, American Council on Education, 1785 Massachusetts Avenue. 1958. 40 pp. Contains the 5 papers presented at the 16th Annual Meeting of the Council on Cooperation in Teacher Education, and also the report approved by the delegates at the annual meeting in Chicago on October 31—November 2, 1957.

Exploring. New Brunswick, New Jersey: Boy Scouts of America. 1958. 349 pp. $1.25. This manual, like the new Exploring program of the Boy Scouts that it portrays, has been involved from the experience, research, and imagination of Explorers, volunteers, and professional Scouters. Its discussion and aids included in 19 chapters cover the following area: Post activities, Post specialties, Post superactivities, officers' meetings, Post meetings, activity committees, Explorer's code, methods for activities, administrative know-how, ceremonies, recognitions, Explorers cabinets, having friends, getting along with families, emotional self-control, choosing a career, your life, and resources. Indexed. Also available from the same source is *Explorer, Parents' and Leaders' Guidebook* (1958. 48 pp.).

Financing Professional Salaries for Professional Teachers. Washington 6, D. C.: National Education Association, 1201 Sixteenth Street, N. W. 1958. 24 pp. 10 for $1; per hundred, $7.50. This pamphlet tells why higher salaries are justified, outlines the kinds of changes required in salary schedules, and makes a forthright summary of the costs. It is a strong plea for professional salaries and a strong plea for Federal support for public schools. Teachers and laymen alike will find it informative.

FRANCKE, MAX, editor. *CRS Book Catalog.* Brooklyn 13: Children's Reading Service, 1078 St. John's Place. 1958. 64 pp. This up-to-date 13th annual (1959) edition presents a carefully chosen list of approximately 1,000 books of many publishers, arranged by subject areas and grade levels from kindergarten through senior high school and annotated. Special emphasis has been placed on books for remedial reading. This Reading Service offers two types of book exhibits. The School Exhibit enables school personnel to inspect books before placing orders. PTA Book Fair provides teachers, pupils, and parents with an opportunity to select and purchase good books and thereby earn an income for their school fund. A full description of these services is

contained in this publication. Copies of the new catalog are available free to any teacher, librarian, principal, or superintendent who request them on official letterheads—otherwise 25¢ in stamps or coin. Also available from the same source is *CRS Audio-Visual Catalog* which lists over 1,000 phonograph records and filmstrips arranged by topics and age groups.

KOHN, HANS. *West Germany: New Era for German People.* New York 17: Foreign Policy Association, 345 E. 46th St. 1958. (No. 131). 64 pp. 35¢. A professor of history in The City College of New York gives some answers based on a long-time study of the German Nation. Includes a discussion guide.

KUBLIN, HYMAN. *An Introductory Reading Guide to Asia.* New York 22: The Asia Society, Inc., 18 East 50th Street. 1958. 25 pp. Free. An annotated list, highly selective. Also available from the same source is *Films on Asia, A Selected List.* (1958. 32 pp. Free). This includes recommended films and film sources. Annotated.

The "Little" Economies—Problems of U. S. Area Development. New York 22: Committee for Economic Development (CED), 711 Fifth Avenue. 1958 (Sept.) 60 pp. 50¢; special arrangements for quantity orders and for classroom or other educational use. The need for wider participation by businessmen and other private citizens in economic development on the state and local level is stressed in the six papers presented herein on problems of United States area development presented by outstanding experts at the semi-annual meeting of the CED Board of Trustees.

Local Color, 1957-58. Washington 6, D. C.: Department of Classroom Teachers, National Education Association, 1201 16th Street, N. W. 1958. 32 pp. 25¢. A summary of projects completed under the Local Project Recognition Program sponsored by the Department and the state departments of Classroom Teachers. Also available from the same sources *Pointers for the Local Association,* (1958. 47 pp. 25¢), a guidebook for classroom teachers.

Manual for Teachers. Brooklyn 1: Board of Education, Publication Sales Office, 110 Livingston Street. 1958. 208 pp. 50¢. This is the 1958-59 WNYE radio manual for teachers of New York City. Radio was used in 46,000 classes weekly last school year. In addition to the complete listings of programs by days of the week and hours of the days for the entire school year 1958-59, there is included for many of the series, material designed to guide the teacher in the classroom use of the broadcasts. Also included are general suggestions on how to use radio as a teaching aid. Subjects included are: Language Arts, Social Studies, Music, Health Education, Science, and Guidance, covering the elementary and secondary levels. Also presented for high-school home instruction are English (4 years), World History, American History, Biology, and General Science.

Mathematics and Your Career. Washington 25, D. C.: U. S. Department of Labor, Bureau of Labor Statistics, 1958. 8 pp. The facts about jobs and their educational requirements presented in this pamphlet were collected by the Bureau of Labor Statistics in the course of its occupational outlook research. The purpose of the pamphlet is to bring the facts about the mathematics training required for employment in different occupations to the attention of high-school and college students interested in planning their education.

MONTAGU, ASHLEY. *What We Know About "Race."* New York 22: Anti-Defamation League of B'nai B'rith, 515 Madison Avenue. 1958. 40 pp.

25¢. This is the second pamphlet of the One Nation Library—a new series of publications primarily directed at youth groups and young adult audiences. With humorous illustrations, this pamphlet explains what "race" is and what it is not. The author examines the physical differences between ethnic groups, and analyzes the interrelationship of heredity, intelligence, and environment. The pamphlet reaffirms the principle that every man is entitled to equality of opportunity and the right to development. These essential points are stressed: Ethnic groups resemble each other much more than they differ from one another; Man's outstanding trait is his ability to learn—and to profit by his experiences; Race has no relationship to intelligence; and intelligence cannot develop without the stimulation of environment.

1958 Handbook on Women Workers. Washington 25, D. C.: Superintendent of Documents. 1958. 159 pp. 45¢. This handbook of facts on women workers in the United States is published biennially by the Women's Bureau of the United States Department of Labor. It brings together basic information on women's employment and occupations; the age and marital status of women workers; women's earnings and income; women's educational status; and state laws affecting the employment and civil and political status of women. The publication is designed as a source book for the use of employers, labor unions, government officials, educators and counselors, women's organizations, and other persons and organizations interested in the facts about women's employment. The 1958 edition contains information which has become available since 1956 and brings up to date previous editions. The index at the end indicates by section number all references to a specific subject.

Official Report of the NEA Department of Classroom Teachers. Washington 6, D. C.: Department of Classroom Teachers, 1201 16th Street, N. W. 1958. 112 pp. Lists officers for 1957-58 and presents officers annual reports, committee reports, a report on professional salary schedules for classroom teachers, report on UNESCO, the 15th National Classroom Teacher Conference, reports of Convention Committees, constitution and by-laws, platform, resolutions, *etc.*

Professional Opportunities in Education. Newark, New Jersey: Department of Personnel, Board of Education. 1958. 28 pp. This brochure is intended to acquaint teachers, adequately educated and equipped, with the opportunities and advantages of joining the professional staff of the Newark School System. Specifically, it is designed to supply information concerning the competitive examinations to be held on December 30, 1958.

RENZ, R. R. *Self-Directed Learning for Educational Leadership.* Lexington: College of Education, University of Kentucky. 1958 (Sept. Volume XXXI, No. 1). 72 pp. $1. An abridgement of "A Study of Student-Centered Teaching and Its Application to the Development of Educational Leadership" which suggests effective methods of helping students do certain types of learning.

Report of the Headmaster. Elizabeth, New Jersey: The Pingry School. 1958. 16 pp. Discusses enrollments over the years, admission to college, education in the post-sputnik age, the Advanced Placement Program, religion, the library, student activities and athletics, faculty, guidance, gifts to the school, finances, and the future.

Studies in Business and Economics. College Park: Bureau of Business and Economic Research, University of Maryland. 1958. (Sept. Volume 12, No. 2). 12 pp. (8½" 11"). This contains a discussion of various factors shaping the Carroll County economy as an aid in analyzing and planning future economic development in the county. Includes population growth, personal income, employment and wealth, agriculture, commercial electrical sales, telephone service, and planning for the future.

Tenth Annual Report of the State University of New York. Albany: State University of New York. 1958. 54 pp. A report of the Board of Trustees for the calendar year 1957.

This We Believe. Washington 6, D. C.: The American Association of School Administrators, 1201 16th Street, N. W. 1958. (Sept.) 16 pp. 25¢; quantity order $1 per dozen, or $8 per hundred. A reaffirmation of belief in the public schools made as a joint statement by the American Association of School Administrators and the National School Boards Association.

News Notes

FOREIGN RELATIONS PROJECT

During the 1958-59 academic year, the North Central Association Foreign Relations Project, under the direction of James M. Becker, 57 West Grand Avenue, Chicago 10, Illinois, is inviting an additional 1,000 schools of the North Central region to participate in a program designed to improve instruction in American foreign policy and foreign relations. The schools are invited from lists submitted by state departments of public instruction, North Central state chairmen, representatives of regional associations, University professors, and other educators. It is expected that by spring, 1960, more than 2500 schools will be enrolled in the Foreign Relations Project. Each participating school is asked to use a minimum of two classroom sets of any two titles in the Foreign Relations series. The Project staff in cooperation with numerous local and state groups has planned a large number of conferences on foreign relations. In Ohio, the Foreign Relations Project is cooperating with the International School of America in selecting an all-expense paid scholarship to the International School. The School's program includes an 8-month world study-travel program beginning in September 1959. Two new booklets are being prepared. One deals with Western Europe, the other with Southeast Asia. The other four available during this academic year are: Our American Foreign Policy, American Policy and the Soviet Challenge, Chinese Dilemma, and America's Role in the Middle East.

JOHN HAY FELLOWSHIP PROGRAM

Under the expanded John Hay Fellows Program, approximately 60 fellowships will be awarded for 1959-60. This Program enables a number of mature and talented high-school teachers to pursue studies in the Humanities for one academic year with a view to improving their teaching and their contribution to American education. Teachers will spend the year at either

the University of Chicago, Columbia University, Harvard University, Northwestern University, or Yale University. The Fellows, divided about evenly among the five university centers, have an opportunity for individual study, for an exchange of ideas and experiences with their colleagues and with members of the university faculties. Each Fellow follows a program of studies in the broad area of the Humanities, planned in cooperation with an adviser at each university and designed to extend the Fellow's range of knowledge in his own and related fields. The adviser also meets with the Fellows regularly in bi-weekly seminars to which distinguished visitors are often invited. During the year, Fellows in one university meet with those from other universities.

For 1959-60, fourteen states and the District of Columbia have been selected for participation in the fellowship program. Fellowships will be awarded to those teachers who, in the judgment of the Trustees of the Greenwood Fund, under whose general supervision the program operates, most satisfactorily meet the standards and criteria set forth for the fellowship. Applications will be welcomed from: Arizona, Colorado, Connecticut, the District of Columbia, Georgia, Louisiana, Maryland, Michigan, Missouri, New York (outside metropolitan New York City), North Carolina, Ohio, Pennsylvania (as far east as Williamsport, Harrisburg, and York), Texas, and Washington.

During the academic year of study, the Greenwood Fund will make payments as follows: (1) To the Fellow: a stipend equal to the salary expected from the employing system during the year of fellowship; a Fellow whose salary is less than $4,500 will receive a stipend of $4,500. (2) To the Fellow: first-class rail transportation for himself and primary dependents. (3) To the University: tuition fees to cover the Fellow's study. Teachers who are interested in the program are invited to discuss application with their administrative officers and write immediately for complete information and application blanks. Correspondence should be addressed to: Charles R. Keller, Director, John Hay Fellows Program, 630 Fifth Avenue, New York 20, N. Y. Completed applications for 1959-60 must be received by December 15, 1958.

VISITING ASSOCIATESHIPS IN TEST DEVELOPMENT, SUMMER 1959

Two Visiting Associateships in Test Development are being offered to secondary-school or college teachers by the Educational Testing Service, one in Science and one in Mathematics. The appointments will be for July and August 1959. The Associates will work primarily on tests at the college-entrance and higher levels. They will analyze existing tests and work on planning new ones. The stipend is $700 plus transportation to and from Princeton. Application forms must be submitted by February 27, 1959. All inquiries should be addressed to Mrs. W. Stanley Brown, Test Development Division, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

NATIONAL MERIT SCHOLARSHIP TEST

On April 29, some 479,000 high-school students in 14,000 high schools took the National Merit Scholarship Qualifying Test as the first step in the competition for at least 735 Merit Scholarships and other awards that await the winners of the 1958-59 competition. This group of scholarships constitutes the largest privately financed system of scholarship awards in the history of this country. The total value of the awards is estimated at $5 million. The tests

have been graded, and the highest scoring students in each have been identified —10,000 in total. They now become Semifinalists in the competition for the 1959 Merit Scholarships.

They face another rigorous three-hour examination, the Scholastic Aptitude Test of the College Entrance Examination Board, which will further substantiate their high scores on the NMSQT. This second test will be given in testing centers throughout the U. S. on December 6, 1958. Those who repeat their high scores on this second test will become Finalists in the competition.

In the final phase of the competition, high-school grades, extracurricular activities, school citizenship, and leadership of the students will be evaluated, along with the scores on the tests. About May 1, at least 735 fortunate young people will be named the Merit Scholars of 1959. All Finalists will receive Certificates of Merit attesting to their high ability; and all colleges and universities will be notified, thus enabling these students to be considered for a wide range of other scholarship awards.

Each Merit Scholarship is a four-year award covering the four undergraduate college years, and each award carries a stipend tailored to the need of the individual winner. The stipends have been averaging about $650 a year. Minimum awards, for students who have been determined to have no financial need, are $100 a year; and maximum awards, for students who have been determined to have maximum need, are $1,500 a year. Merit Scholars make their own choice of college and are free to choose any course of study leading to one of the usual baccalaureate degrees. The colleges chosen by the Merit Scholars also receive cost-of-education grants ranging to $500 per year to help defray the actual costs of educating the students.

The Merit Scholarship Program is now in its fourth year. It was founded in 1955 with grants of $20 million from the Ford Foundation and $500 thousand from The Carnegie Corporation of New York. Sponsors have thus far awarded $12 million worth of scholarships, and have pledged an additional $4.5 million. Over 2,300 of the nation's most able students are now holding Merit Scholarships at some 325 colleges. Nearly one million high-school students have been tested in the massive talent hunts. The competition is open to students in any public, private, or parochial high school in the United States and possessions.

"WINGS OVER LATIN AMERICA" CONTEST

A 31-day all-expense tour of 7 different Latin American countries, with transportation provided by Pan American Airways and Panagra, is the first of three prize trips offered in the "Wings Over Latin America" contest, by *Scholastic Teacher* Magazine. These free trips will be awarded to the three teachers or educators submitting the best essays on the theme "Why I Would Like To Visit Latin America." First-prize winner will visit: Venezuela, Peru, Uruguay, Chile, Curacao, Argentina, and the Dominican Republic, and will stay at internationally famous hotels in each country, including: the Grand Hotel Bolivar in Lima, the Curacao Intercontinental, and the Plaza in Buenos Aires. The second prize trip is a 20-day free tour of the Caribbean, and third prize is a week's trip to the Dominican Republic. All winners will fly *via* Pan American Airways and Panagra, and be provided with first class hotel accommodations. Three runners-up will each be awarded an *Encyclopaedia Britannica World Atlas.*

The contest is open to all full-time United States teachers, supervisors, curriculum specialists, school librarians, or administrators in any public, private, or parochial elementary or secondary school. Entries—in essay, article, or letter form—should be in 750 words or less, and must be submitted by January 15, 1959, to: "Wings Over Latin America," Scholastic Teacher Magazine, 33 West 42nd Street, New York 36, N. Y. Details of the contest can be found in the September 19 issue of *Scholastic Teacher*, or may be obtained by writing to the above address.

NATIONAL SCHOOL BOARDS ASSOCIATION CONVENTION

The National School Boards Association will hold its 19th annual convention in San Francisco, January 26-28, 1959. More than 3500 school board members and leading educators from all over the United States will attend the meetings, to be held in the Civic Center and at the Sheraton-Palace Hotel. The theme of this year's convention is "Improving Education—A Free People's Responsibility." It is a theme which is particularly appropriate because our nation's system of school boards exemplifies the belief that education is first and foremost a responsibility of the individual citizen. School board members represent the people who own and support the schools.

GIRL SCOUTS' TV PROGRAM

Girl Scouts of the U. S. A. will be the first youth agency to use nation-wide educational television to reach its membership, Mrs. Charles U. Culmer, national Girl Scout president, announced. A ten-week series of half-hour programs on the hand arts began October 29 on the NBC-ETV circuit. Girl Scout membership is currently over three million.

Called *Adventuring in the Hand Arts*, the series is designed to give Girl Scouts and the public as well the fundamentals of hand crafts—why they are practiced, how they originated and the important part they have played in the development of mankind. The series is a cooperative endeavor of the Girl Scouts of the U. S. A., the National Broadcasting Company, and the Educational Television and Radio Center in Ann Arbor, Michigan.

"Recognizing that television has become a vital force in the lives of America's children," Mrs. Culmer stated, "the national Girl Scout organization is embarking on this first experimental series primarily to stimulate Girl Scout troops and leaders to new approaches in the arts field. The programs are produced in NBC studios in New York and distributed "live" through the Educational Television and Radio Center at Ann Arbor, Mich., to the thirty-one currently operating educational television stations across the country. NBC stations will present the series by delayed broadcast at times most convenient locally.

MERIT SCHOLARSHIPS WINNERS NO INDEX OF THE EFFICIENCY OF A HIGH SCHOOL

The National Merit Scholarship Corporation does not feel that the quality of effectiveness of a school can be properly judged by the number of Semifinalists it has in the Merit Program. The number of Semifinalists in each state is set by a quota based on the senior high-school population of the state. All selections are made on an individual state basis. The distribution of the population throughout the state, the size of the school, the native intelligence of its top students, the nature of the community where the school is

located, the purpose of the school, and many other factors having nothing to do with the total effectiveness of the school can influence its number of Semifinalists. Private schools and public schools which have selective admissions of course should be expected to have more Semifinalists.

SCIENCE AND MATHEMATICS

A group of prominent educators and scientists have concluded that improving the quality of science and mathematics education in the public schools is even more important than increasing the number of students taking such courses. A summary of their recommendations for improving the teaching of science and mathematics is presented in *Guidelines for Science and Mathematics*, a U. S. Office of Education publication released last spring. The recommendations were developed during a two-day conference at the Office of Education last February and in subsequent discussions with the participants. The conference was called by Commissioner of Education Lawrence G. Derthick at the request of the American Association of School Administrators and the Council of Chief State School Officers. Sponsors of the conference also included the American Association for the Advancement of Science, the National Association of Secondary-School Principals, and the Scientific Manpower Commission.

Among the participants were James R. Killian, Jr., Special Assistant to the President for Science and Technology; Howard L. Bevis, Chairman of the President's Committee on Scientists and Engineers; Reuben G. Gustavson, President of Resources for the Future, Inc.; Bowen C. Dees, Deputy Assistant Director for Scientific Personnel and Education, National Science Foundation; and M. H. Trytten, Director of the Office of Scientific Personnel, National Academy of Sciences, National Research Council. The group also included officials of the sponsoring organizations, state education executives, college professors, superintendents of local school districts, school principals, and others.

A recurrent theme of the guidelines is that teaching of science and mathematics should be directed toward developing the capacities of boys and girls to think for themselves as well as toward the imparting of facts. For example:

—Students should have the opportunity for "continuous experience" with science from kindergarten through high school.

—For abler students, at least the first year of work ordinarily done in college should be moved down into the high school.

—Science and mathematics are methods of inquiry as much as they are bodies of knowledge. Science teaching should impart an understanding of the methods of scientific investigation and research.

—A few courses well taught are better than many courses poorly or indifferently taught. In any one course, mastery of a limited number of basic concepts is better than partial understanding of many concepts.

The group said that school authorities and the public should recognize that the shortage of mathematics and science teachers is due in part to the strong attraction of high-salaried industrial jobs.

Guidelines

The guidelines include several recommendations concerning curriculum, textbooks, selection of pupils for the more advanced courses, use and training of teachers, and other aspects of science and mathematics education. These guidelines are:

1. Science and mathematics should be taught as basic sciences. They are more than tool subjects; they are cultural disciplines in the truest sense. Basic science is that body of knowledge obtained by techniques which enable us to place limiting values on our preconceptions. Basic sciences are especially concerned with fundamental concepts rather than practical specifics.

a. Basic science is driven by native curiosity rather than practical considerations. It must be organized and taught so as to give boys and girls vital experience in getting answers to whatever questions they are curious about. Basic science provides a way of encouraging versatility in students.

b. Basic science properly taught will provide young people with an opportunity to develop an understanding of the scientific enterprise, its attitudes and methods, its strengths as well as its limitations.

c. It is essential that the lay public understand the place and importance of basic science in the cultural fabric of the times. It is likewise important that all young people have the opportunity for continuous experiences with basic science through grades 1-12.

2. Science and mathematics are methods of inquiry as much as they are bodies of knowledge made up of principles and concepts. The methods of teaching science must demonstrate the methods of scientific investigation and research. Mathematics teachers must develop skills in using mathematics as a way of thinking. Science teachers must strive to develop in pupils the ability to solve problems. This is a general ability comprised of specific intellectual skills, such as facility in defining problems, proposing hypotheses, identifying assumptions, interpreting data, and drawing sound counclusions. Such skills can be learned only as they are encountered and used day after day in the classroom. The teacher of science and mathematics must be skillful in setting situations which will cause pupils to use these skills in the solving of problems. Science teaching must provide for more than a memorization of scientific facts and principles; it must be designed to help the student discover princples for himself.

3. Improvement in quality in science and mathematics education is more important than increases in quantity.

a. A few courses well taught are preferred to many courses poorly or indifferently taught. It may be better not to offer a specialized science or even a general science course unless a qualified teacher is available.

b. In any given course, mastery of a limited number of basic concepts is preferred to much ground covered with only a partial understanding of many concepts.

c. Students specializing in science should study both the physical and the biological sciences.

d. The responsibility for teaching science and mathematics should be concentrated among a minimum number of teachers in order to use the best qualified teachers most effectively.

e. A better selection of students taking physics is probably more important than an increase in the number of students studying physics. In 1956 about one fourth of the high-school seniors took this subject.

4. Science and mathematics courses of study should be improved at all levels of the public schools, K-Gr. 12.

a. Continuous critical re-evaluation of the present curriculum in mathematics and science is necessary to keep pace with the scientific revolution.

Since many of the scientific advances will be of national concern, perhaps vital to our national security, the question arises, "What provisions should be made for channeling information to those who develop the curriculum?" The conference recommended that a clearinghouse be established for this purpose.

b. Encouragement should be given to schools that, through experimentation, are attempting to keep the content in high-school mathematics and science abreast of the modern developments. The schools cooperating with the University of Illinois and Massachusetts Institute of Technology are examples.

c. Over the past quarter of a century, many textbooks in science have become encyclopedic in nature because of the accelerated pace at which new knowledge has been discovered and because of the rapid advances in technology. New topics and applications have been added with not enough removing of material that has become obsolete. Some new concepts have been neglected.

d. There is a need for competent groups on a national scale working with teachers and educators to evaluate critically the content of science and mathematics textbooks, to sort out the less important materials, and to prepare new materials. There are some areas of the curriculum of such importance that they should be developed by national committees with provisions for local adaptations.

e. For the abler students there is a need to move down into the high school much of the first year of work ordinarily done in the college. Solid geometry could be included in the course in plane geometry with the time thus saved used for instruction in algebra. With a systematic elementary-school science program, general science in the ninth grade might profitably be replaced by a study of biology. Chemistry and physics might be offered in grades ten and eleven with advanced biology in the twelfth grade.

5. The improvement of the teaching of science and mathematics at all levels is essential. Continuous training by science and mathematics teachers is required to keep abreast of the changing methods and knowledge in these fields.

a. If science and mathematics teaching are to be strengthened, teachers' salaries must be increased to the point where adequately prepared majors in these fields can be attracted and held in teaching as a career. The present shortage of teachers of these subjects is in part due to the fact that industry attracts them with higher salaries.

b. Preservice education of elementary science and mathematics teachers must be strengthened. Certification standards should be modified to include science and mathematics requirements as a significant part of teacher preparation programs for elementary teachers. In-service education programs should also provide opportunities for elementary teachers to strengthen their competence in these areas. Elementary teachers cannot effectively fulfill their responsibility of providing a solid educational base in mathematics and science unless they have encouragement to improve their teaching in these fields.

c. Administrators may help strengthen science and mathematics teachers through the (1) encouragement and financial assistance to attend summer or locally operated institutes; (2) organization of study groups for analyzing concepts needed in the curriculum in science and mathematics; (3) utilizing of especially well-prepared and competent teachers to assist those on-the-job who are not so well prepared.

d. The practice of releasing master science and mathematics teachers for a year to attend institutes and to teach other teachers is questioned. Master

teachers may be used more effectively to conduct summer workshops. Year-round institutes should concentrate on the development of new teachers, those just ready to be graduated from college.

e. State departments of education have a responsibility to cooperate with public and private higher institutions in workshops, institute programs, and in providing curriculum and teaching consultants for in-service education programs.

f. Since many mathematics teachers have not been trained in modern scientific developments, retraining in summer institutes of high-school teachers in the analysis, probability, statistical inference, and fundamental concepts from the contemporary mathematical viewpoint is a first step possible to all schools in the improvement of the mathematics program.

g. Administrators should continue to seek teachers of mathematics and science who have been broadly educated as well as deeply educated in their major subjects.

6. Provision should be made for the maximum development of all pupils. Learning science and mathematics is a very personal experience, requiring different opportunities for different children.

a. In addition to special enrichment activities in the classroom, organizational adaptations should be made for the maximum development of both the slow and the rapid learner. Special classes, acceleration, and variable pupil loads are organizational procedures that are used in developing the potential scientists.

b. Individualized opportunities must be given to pupils to learn to conduct investigations and to solve problems. All students cannot be expected to do the same thing at the same time. Classes should be small enough that a teacher can give personal attention to the accomplishments and learning requirements of each student. Students should be permitted to engage in individual or small group projects as a way of personalizing learning opportunities. On the part of administrators and the public, there must be an attitude which will give teachers support in forward-looking and effective methods of teaching.

c. The talented pupil should be identified early. Although all the characteristics of the academically talented are not known, enough is known to identify most talented pupils. Teachers are cautioned against depending upon a single criterion to identify the pupils with potential in science and mathematics. The teacher's opinion, all information in the pupil's accumulative record folder, and the results of tests dealing with verbal comprehension, abstract reasoning, and general achievement should all be used in identifying the able student. Identification of the talented without provision for their development is of little value. The talents often become evident only when opportunities are provided for their development.

7. Many methods and resources are necessary in effective science and mathematics teaching. The annual budgeting of funds for equipment, supplies, and incidental purchases for both science and mathematics is indispensable for the independent planning and carrying out of effective programs.

a. In the high school, there is a need for a variety of supplementary teaching aids in science and mathematics, including motion pictures, filmstrips, still pictures, television, and others.

b. In the elementary school, there is need for some basic equipment both for science and mathematics. There is often need to provide teachers with easily

available funds for the purchasing of supplies and materials from local stores. This often affords the opportunity for improvising simple homemade equipment which may be used in developing resourcefulness and lead to real experiences in scientific inquiry.

8. Improved counseling and guidance, not only for science and mathematics but also for all other subjects, must be made available in both elementary and secondary schools.

a. The need to improve the guidance and counseling services for science and mathematics is acute at this time. More young people need to be encouraged to consider careers in these fields. It is especially important that this guidance be started far enough down in the educational program to catch the young people at an age when their interest in science and mathematics is beginning to take shape and when they are becoming career minded.

b. Because of the high degree of specialization in science and mathematics today, full and adequate career guidance takes on a degree of complexity not found in all other fields. The work of the guidance counselor may, at some points, need to be supplemented by the teachers of these subjects and by competent professional people in the community. Many engineering and scientific societies provide these services through programs which channel down from the national to the local level.

NATIONAL LIBRARY WEEK, APRIL 12-18, 1959

April 12-18 has been designated National Library Week for 1959. This second, greatly expanded national reading program is aimed at reinforcing the tremendous interest generated by the first celebration of NLW in March 1958. Emphasizing the rewards of reading for fun, knowledge, and advancement, the program, with the theme, "Wake Up and Read" will once again be a community effort in individual cities, towns, and villages throughout the United States where citizens of all occupations will unite in a campaign to encourage reading —in homes, schools, churches, businesses, and civic centers. Sponsored by the National Book Committee, Inc., in cooperation with the American Library Association, the first National Library Week enlisted the active support of over 5,000 communities. On a national level, magazine media carried 22 articles reaching 68,000,000 people; 14 radio and television network shows reached another 170,000,000 homes; more than $800,000 in spot time was donated by broadcasters. Newspapers, both national and local, published 11,607 major stories within a three-week period last year.

WORKSHOP FOR STUDENT COUNCIL SPONSORS

The Rutgers University School of Education sponsored the Seventh Annual Workshop for student council sponsors on October 17, 1958. The speaker at the morning general session was Dr. Ordway Tead, eminent author, who spoke on the subject, "Leadership Toward Responsibility and Creativity." His publications reflect his interests in education and personnel administration. The Rutgers workshop for student council sponsors is unique among student council workshops because it is conducted exclusively for adults who are interested in council work. Each year sponsors, principals, college personnel, and others meet in this workshop to discuss various aspects of student councils. Each November about 1800 students who are members of their respective school's student councils meet on the Rutgers campus for their annual conference.—*The*

Jersey Schoolmaster, a publication of the New Jersey Secondary-School Principals Association.

PROGRAM TO HELP PUBLIC SECONDARY SCHOOLS

The International Paper Company Foundation is now in the third year of its experimental program for direct assistance at the secondary-education level to school systems serving communities immediately adjacent to paper mills owned by International Paper Company. Under this program neither International Paper Company nor the Foundation has any special point of view to present or any particular course of action to promote. The pattern is for each school system—working with the coordinating educational institution retained by the Foundation in that part of the country—to identify its own special problem and to develop action aimed at a solution. Southern schools work with the School of Education of Alabama Polytechnic Institute and northern schools with Teachers College, Columbia University.

The Foundation pays the bill for the institutions' services and makes modest grants of funds to finance the various school system projects. Grants are made on a "seed-money" basis for projects in connection with the schools' instructional and guidance programs, for purposes which in any particular community could not initially be included in the regular tax-supported budget, but always with the understanding that support for any one project must taper off after the first year. The concept is that support will not be continued for a project which cannot prove itself to the extent that the school board, within a reasonable period, is willing and able to take over responsibility.

The program now includes twenty communities in six southern and three northeastern states. With three additional school systems in western New York State entering the program this fall, all eligible systems are now participating. Expenditures have increased as surveys have been completed and additional schools have developed projects and submitted budgets. From an original budget of $31,500 in 1955, an expenditure approximately $260,000 is anticipated for the 1958-59 school year.

THE 4TH R

The Fourth R, an American Theatre Wing Community play, was first played at the NEA Convention, Cleveland, Ohio, 1958. It was well received. Because of popular demand, the play by Barbara Davidson has been published by the National Education Association, 1201-16th Street, N. W., Washington 6, D. C. The plot is a proposal to add another R to the Three Rs in the school curriculum. This creates much curiosity as to what the Fourth R is and how much it will cost. Through a light touch, a serious message is conveyed about current educational issues in the post-sputnik era. This play is designed especially for laymen and can be produced by senior high-school students. It will be a good program for a school's open house, for a PTA meeting, and for other community groups. It is easy to stage, requiring few props. It can easily be presented by local organizations where some amateur acting skill is available. Drama clubs and little theatre groups, where they exist, may be willing to prepare one or two casts to appear at several community meetings. The cast consists of three men and two women. The time required to present the play is 35 minutes. Six copies of the play may be obtained from NEA for $5. This includes payment of the royalty. A sample copy of *The Fourth R* is $2. After examination, the additional five copies, if desired, can be purchased for $3.

The NEA also has available for distribution leaflets entitled *Local Association Activities.* These are four to eight pages in length and deal with activities of interest to local associations and their members. Leaflet No. 3 on "The Improvement of Instruction" (6 pages free) discusses ways in which the local association can help in the important area. Leaflet No. 12, dealing with "Education for International Leadership" (8 pages, free), outlines challenges, suggests projects, and provides a selected bibliography of source materials as aids to educating for international leadership.

READING TEST FOR HIGH SCHOOLS AND COLLEGES

The Psychological Corporation, 304 East 45th Street, New York 17, N. Y., has recently made available for use in high schools and colleges a reading test. Series 1 of this test, entitled the *Davis Reading Test* by Frederick B. and Charlotte C. Davis, is available, in four comparable forms: 1A, 1B, 1C, and 1D. The test is intended for grades 11 and 12 and the freshman year of college. Results with college freshmen indicate that it is likely to be usable in the other college years in most institutions. The test provides two scores: *Level of Comprehension* and *Speed of Comprehension.* The *Level score* indicates the depth of understanding displayed by a student in reading the kinds of material he is ordinarily required to read in high school and college; the *Speed score* indicates the rapidity *and accuracy* with which he understands the same material.

The test is designed to measure five categories of reading skills: (1) finding the answers to questions answered explicitly or in paraphrase in a passage; (2) weaving together the ideas in a passage and grasping its central thought; (3) making inferences about the content of a passage and about the purpose or point of view of its author; (4) recognizing the tone and mood of a passage and the literary devices used by its author; and (5) following the structure of a passage.

The test does not provide separate scores in these categories. However, if a student's Level and Speed scores are low for his grade or if the difference between is sufficiently great (as specified in the section in the manual on Interpretation of Scores), the need for individual diagnosis of his reading skills is indicated. The test is especially useful for assessing the over-all reading ability of individuals or groups and for measuring growth in the over-all reading ability of individuals or groups. Each of the four forms is provided with a key for hand scoring. Provision has also been made for machine scoring.

HAVE YOU READ?

"Guidance and the Nation's Needs" by Lawrence G. Derthick in the *Personnel and Guidance Journal,* October 1958, pp. 107-13; also in the same issue: "High School Teacher Prediction of College Success" by Leroy R. Pierson, pp. 142-45.

"Guidance and Educational Strategy" by Dael Wolfle in the *Personnel and Guidance Journal,* September 1958, pp. 17-25; also in the same issue: "Student Handbooks: Observations and Recommendations" by Robert M. White, pp. 43-46.

"To Merit Pay or Not To Merit Pay" by Clarence Hines in the *School Board Journal,* August 1958, pp. 9-10, 43; also in the same issue: "Academic Scholarship—A challenge to Your schools" by Robert W. Strickle, pp. 15-16; "Improving Science and Mathematics Instruction in the Smaller High Schools" by

Lloyd Burdal, Henry M. Reitan, Alfred B. Butler, and Gordon E. McCloskey, pp. 17-19 (second installment of a two-part article); "School Dedication—Why Not Make a Production Out of It?" by Robert L. Brigham, p. 20.

The teacher rating technique described by Edwin R. Tolle and Walter G. Murray in the *Journal of Educational Research*, May 1958.

The special issue of the October 1958 *Parents' Magazine* devoted to *U. S. Schools; A Report on the Progress and Problems of Education*—designed for parents with children of all ages.

"Those Fairy Tales about 'Palaces'" in *NEA Journal*, October 1958.

"Report from the Grass-Roots" from *Saturday Review*, September 13, 1958.

"Bargain-Basement Education Is No Bargain" by Martin L. Gross from October 1958 issue of *Coronet*.

"The Frightening Challenge of Russia's Schools" by Lawrence G. Derthick and George B. Leonard, Jr., in October 14, 1958, issue of *Look*.

WORKSHOP ON THE TEACHING OF ENGLISH

Last fall the Greenwich, Conn. Public Schools conducted eight Workshops on consecutive Wednesday afternoons from 3:45 to 5:45 P.M. on the "Teaching of English in the Junior and Senior High School." It was the first time that so many important people in the field of English presented their ideas to a local group. Nowhere outside of a national meeting could a teacher be able to hear these outstanding persons. The speakers included: Dr. Angela Broening, Dr. Joseph Mersand, Dr. Richard Corbin, Dr. John Warriner, Dr. Arno Jewett, Dr. Dorothy Potter, William Dow Boutwell, and Dr. Mark Neville. Hardy R. Finch, Greenwich High School English chairman, was the director of the workshop. Carl Pickering, adult education supervisor, and Edmund Loughlin, principal, New Lebanon School, were associate directors. The topics discussed included English fundamentals (grammar, usage, punctuation, spelling, vocabulary), reading, written composition, literature, audio-visual aids, and mass communications media. All persons attending regularly received in-service credit. Teachers working on the year-beyond-the Master's program could earn two points of graduate credit by writing a report and by completing other workshop requirements.

OUTSTANDING EDUCATIONAL BOOKS FOR 1957

More educational books were published in 1957 than in any year since 1941. To help readers find the most useful and significant titles among the 317 volumes issued last year, the Enoch Pratt Free Library in Baltimore, Maryland, has prepared a list entitled "Outstanding Educational Books of 1957." The list describes the books briefly and gives prices, publishers, and publishers' addresses. It is available at five cents a copy (cash) from the Publications Department, Enoch Pratt Free Library, 400 Cathedral Street, Baltimore 1, Maryland. There are special rates for quantity orders.

CARS USED FOR DRIVER EDUCATION TOTAL OVER 12,000

The total number of cars in use for driver education purposes during the 1957-58 school year was 12,177, according to information released by the Inter-Industry Highway Safety Committee. Of this total 11,964 cars were used in public schools and 213 were used in private and parochial schools. Dealers provided a total of 8,676 cars on a free loan basis (8,495 in public schools and 181 in private and parochial schools). Other sources loaned 102 cars (96 to

public schools and 6 to private and parochial schools). Schools purchased a total of 1,522 cars (1,508 by public schools and 14 by private and parochial schools). Cars rented or leased totaled 659 (648 by public schools and 11 by private or parochial schools).—*Action for Safety*, October 1958, National Commission for Safety Education, NEA.

WALT DISNEY ANNOUNCES NEW TRAFFIC SAFETY FILM

A mythical town overrun with a very real traffic fatality record and the method used to overcome the problem are the basis for Walt Disney's newest humorous and thought provoking film, *The Story of Anyburg, U.S.A.* With the release of this film, Disney completes a trilogy of safety films each in full animation—each taking a light approach (and deadly aim) on basic safety problems. *Motor Mania*, starring Goofy in a dual role as the mild-mannered pedestrian as well as the maniacal driver, inaugurated the series. Donald Duck, starring in *How To Have an Accident in the Home*, was the second in the group and proved conclusively that "——accidents don't just happen by themselves—they have to be carelessly planned in advance." *Anyburg, U.S.A.* stars Disney's newest character—the Defense Lawyer—who neatly and effectively spotlights the criminal-at-large on today's highways. Already the recipient of numerous safety awards, *Anyburg, U.S.A.* is available for long-term lease or daily rental through the Educational Film Division, Walt Disney Productions, Burbank, California.

NO LICENSE TO DRIVERS UNDER 18

A strong recommendation that teenagers under 18 be prevented from obtaining driver's licenses was made by a group of educators and safety officials attending the Third National Conference on Driver Education on the Purdue University campus. The Conference made one exception: 16-year-olds who have completed an approved driver education course in high school may apply for a license and, if they pass the state-approved test, may become full-fledged drivers. In this one move—and in the up-dating of other previous recommendations—the Conference achieved what it had assembled for: to set up guidelines for schools and colleges to use in establishing safety and driver education programs which would help cut down the high accident rates among school children and adults.

At present, 35 states license drivers beginning at age 16. Conference participants, who came from 40 states, agreed to work for acceptance of the recommendation and to urge that laws be changed regarding minimum legal age for securing a driver's license. Taking part in the meeting were state education department representatives, school board members, driver education teachers, city and county school superintendents, high-school principals, safety education supervisors, and professors and administrators in colleges and universities.

The Conference also added a powerful voice to the current demand that driver education teachers in today's schools be better prepared. The group recommended that they should hold a Bachelor's degree from an accredited institution of higher learning. In its recommendation regarding the number of class hours students should spend in classroom driver education instruction, and in practice driving, the Conference specified that driver education should be scheduled with a minimum of 30 class hours of 60 minutes each or its equivalent of classroom instruction, and a minimum of 6 class hours of 60 minutes each of practice driving instruction.

POSTERS AND MEDALS

A new school-bond poster, designed to assist communities in obtaining an affirmative vote for school bond issues, has been prepared by the publishers of *Parents' Magazine*. The special posters, printed in two colors on card stock and measuring 16 inches high and 11 inches wide, can be placed at strategic points in local areas, such as bulletin boards, telephone poles, and store window displays. The posters can be used by school boards, civic groups, PTA's, and other organizations to alert their communities to the need for a "Yes" vote at school bond issue elections, in the interest of adequate schools.

Parents' Magazine has also produced an attractive bronze award which can be presented to outstanding teachers in communities. These Teacher Recognition Awards offer one way for school boards and other groups to express appreciation for educational jobs well done. Further information on the School Bond Posters and Teacher Recognition Medals can be obtained at *Parents' Magazine's* Service Bureau, 52 Vanderbilt Avenue, New York 17, N. Y.

DRIVER EDUCATION AND GENERAL MOTORS

General Motors contributed more than $647,000 toward the driver education program in the nation's schools during the 1957-58 school year. Under GM's driver training assistance plan, dealers are awarded $125 for each new automobile loaned to schools for driver training. This allowance helps dealers defray vehicle maintenance and reconditioning costs. GM dealers representing Chevrolet, Pontiac, Oldsmobile, and Buick loaned 5,182 new cars to high schools over the country during the 1957-58 school year—the largest number of automobiles loaned for driver training in one year since GM pioneered the allowance plan in 1955. The company's contributions to dealers under the plan during those three years total $1,737,500.

A NEW HISTORY

The University of Michigan Press' new *History of the Modern World* provides, for the first time in more than half a century, a complete, authoritative modern world history for the general reader. The series stems from an idea conceived 10 years ago by Columbia University's Pulitzer-prize winning historian, Allan Nevins, who co-edits the massive work along with Howard Ehrmann, chairman of the University of Michigan Department of History.

The initial volumes and their authors are: *Russia* by Warren B. Walsh, Chairman of the Board of Russian Studies, Syracuse University; *The Near East* by William Yale, University of New Hampshire; *The Far East* by Nathaniel Peffer, professor of International Relations at Columbia University, and *Latin America* by J. Fred Rippy, professor of history at the University of Chicago. These four, issued as a boxed set under the title "Countries of Decision," will make up the first volumes of the 3,000,000-word series. Others will be published from 1959 to 1961.

A special introductory offer is being made to Founding Members—those who purchase the initial four volumes. They will receive all four volumes—which normally sell for $35—for only $24.95. In addition, they will be entitled to reductions of at least 25 per cent on the remaining 11 volumes. Persons interested in becoming Founding Members should contact their local booksellers or write The University of Michigan Press, Ann Arbor, Michigan.

MILITARY OWNS VAST ACREAGE HERE AND ABROAD

The military departments of the United States as of June 30, 1957, "controlled approximately 35 million acres of land throughout the world. This land, together with the improvements, had an original cost to the United States of $24.8 billion. The real estate under military control may be grouped as follows: 27.3 million acres in the United States, together with improvements thereon, having an original cost of $19.5 billion; 5 million acres in the territories and possessions, together with the improvements thereon, having an original cost of $2.6 billion; and 2.7 million acres in foreign countries together with the improvements thereon, having an original cost of $2.7 billion. * * * The 27.3 million acres under military control in the United States is approximately 1.4% of the total land area in the United States."—Excerpt from page 31, Senate Armed Services Subcommittee Hearings on Military Construction Authorization, Fiscal year 1959.

A MAGAZINE FOR FUTURE ADULTS

The *Young New Yorkers* is a new magazine for sub-teen boys and girls which some people have described as "those earlier immortals, *Youth's Companion* and *Saint Nicholas*." It is an attractive magazine in content and design, created expressly for America's future adults. Its purpose is to stimulate young minds, to provide an impetus for worth-while reading and to counteract the mediocrity to which this age group has been exposed. Articles are selected for their interest and timeliness. They are written in the vocabulary boys and girls understand and are presented in a most attractive and grown-up fashion. It provides a wholesome introduction to reading enjoyment. It awakens the interest of young readers in science, classic fiction, foreign lands, hobbies, careers, sports, fashion, pets and food, good grooming, manners, and health. Most important, it encourages a well-balanced outlook on life.

The publisher, Strong Publications, Inc., 431 E. 57th Street, New York 22, New York, sets aside 50,000 copies of every issue for distribution through co-operating schools. Each sub-teen student in these schools is provided with a complimentary copy of the current issue to take home. This is the publisher's way of introducing the magazine to youngsters and parents. School officials desiring to participate in this bulk distribution program are invited to contact the publisher.

NEW FILMS ON CHEMISTRY

Two new films for high-school chemistry teaching, embodying a number of departures from usual teaching film techniques, have been produced by the Manufacturing Chemists' Association Educational Service. The films, *Combustion* and *Chlorine—A Representative Halogen*, are prototypes of a projected series. They were made by Sutherland Educational Films, Inc., 201 North Occidental Blvd., Los Angeles, California, and are offered for nation-wide sale to schools by the Sutherland organization. Both are in color. The films are designed to fit as closely as possible the requirements of high-school chemistry classroom teaching. Surveys indicated that many excellent films are available to schools, but that they often are made for other purposes and frequently contain extraneous or distracting material.

Combustion runs for 14½ minutes; *Chlorine* for 16½ minutes. The times were set to allow a teacher to use both films effectively in a normal class period. Each film is as simple and direct as possible. There are no actors. The only human element on the screen is the hands of the demonstrator at the laboratory bench. All live footage is photographed as close to the action as possible to give the student the opportunity to observe the action as though it were on his own bench. There are no background scenes or general laboratory shots except in brief opening and closing sequences showing applications of the subjects. Animation is used in each film to show ionic movement or similar phenomena. Special care was used to obtain accurate color and to give opportunities to observe chemical changes.

The film *Combustion* convincingly answers the question, "What is fire?" The following points are shown: Conditions for combustion, showing that they can be fulfilled even if the fuel is under water; rate of combustion and factors that influence the rate; spontaneous ignition; applications of combustion, and the need for continuing study of the subject.

The film on *Chlorine* presents the preparation, physical properties, chemical properties, and uses of chlorine. The following points are shown. Occurrence of chlorine in compounds; position of chlorine among the halogens; structure of chlorine atoms and ions; laboratory preparation of free chlorine by chemical oxidation of chloride ions; properties of chlorine including reactions with metals, non-metals, hydro-carbons, bromides, iodides, water, and hydroxides; preparation of chlorine by oxidation of chloride ions by electrolysis; explanation of electrolysis by animation; industrial preparation of chlorine by electrolysis; uses of chlorine, and opportunities for further research.

Other educational services of MCA include a series of 31 open-ended high-school chemistry experiments; teacher and student demonstrations and experiments for general science classes; a program of awards for outstanding chemistry teachers of undergraduates in colleges and universities; and a program of assistance to schools by industry people in communities.

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(As of December 1, 1958)

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At Low Cost

For members of the National Association of Secondary-School Principals gainfully employed by an organized system of education

YOU CAN BENEFIT from the *preferred risk classification* of your profession through the low-cost Group Life Insurance Plan of this Association.*

YOU CAN PROVIDE, in the event of your death, a cleanup fund, a fund to finance your boy's or girl's college education, or a fund to take care of that mortgage payment.

YOU INTEND to meet these obligations if you live, but will you meet them if you do not live?

Detailed information will be furnished upon request. Write to the

NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS
1201 Sixteenth Street, N. W., Washington 6, D. C.

* All teachers in secondary education are eligible to membership in the National Association of Secondary-School Principals as associate members. All associate members receive all professional services and are eligible for life insurance under the Group Life Insurance Plan of the Association if gainfully employed by an organized system of education.

An Invitation

To Principals of Approved Secondary Schools

Does your school have a chapter of the National Honor Society founded by the National Association of Secondary-School Principals in 1921?

If your school does not have a chapter

And

If your school is accreditied by one of the regional accrediting associations or if it has the highest rating of your state department of education,

You are invited to write for full particulars to:

Paul E. Elicker, Secretary

National Honor Society

1201 Sixteenth Street, N. W., Washington 6, D. C.

Secondary-School Record

(REVISED)

Name, in full _____ Birth Date _____ Sex _____
Last Name First Name Middle Name M. or F.

Home Address _____
Number and Street City State

Name of Parent or Guardian _____ School accredited by

Entered _____ Was graduated / Will be graduated / Withdrew _____
Name of School Month Year

Month Year Location of School

Class periods are ____ minutes, ____ times a week, ____ weeks a year. Passing mark is _____ College recommending mark _____

1. List your complete marking system, highest to lowest: _____ Honor marks _____

2. List other secondary schools by years attended: _____

Are all failing marks for each year listed? ☐ yes ☐ no

CLASS RECORD

Check (√) all subjects where no marks are given.
Star (*) all subjects in progress.

Subject	Grade → / Year → 19	1st Sem. 9		1st Sem. 10		1st Sem. 11		1st Sem. 12		Extra		Standard Exams	Units of Cred.
English													
Lang.													
Math.													
Check Special Lab Periods	Yes	No											
Science													
Social Studies													
Other Subjects													

Notes

A unit represents the study of a subject a full school year four or five times per week.
One unit equals two credits unless otherwise defined.
Use extra column for extra school year.
Use exams column for special exams as Regents, etc.

TEST RECORD

	Name and Form of Test	Year Given	Score	%-ile Gr. Level	Part*
Mental Ability					
Reading					
Achievement					
Other					

ADDITIONAL INFORMATION

*Give available interpretation of tests on an enclosure.

Total number of units school requires for graduation _____

Applicant ranks ☐ exactly ☐ approximately _____ in a graduating class of _____ students

School computed above rank in class by using official record beginning with ____ grade and ending with ____ semester in ____ grade

☐ Marks weighted as recommended by NASSP and AACRAO
☐ Includes all subjects given school credit
☐ Major or full-time subjects only
☐ College preparatory students only

Date _____ Signature _____ Title _____

This Standardized Form prepared and recommended for national use by the Joint Committee on School-College Relations of the National Association of Secondary-School Principals (NASSP) and American Association of Collegiate Registrars and Admissions Officers (AACRAO).

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Standard size, 8½" x 11"—bond paper. **Also available with *Personality Record* on reverse side.**

Personality Record (Confidential)

(REVISED)

Room _____

Grade _____

PERSONAL CHARACTERISTICS OF _____

Last Name First Name Middle Name

School _____ Town or City _____ State

The following characterizations are descriptions of behavior. It is recommended that where possible the judgments of a number of the pupil's present teachers be indicated by the use of the following method or by checks:

Example: MOTIVATION

1		M (5)		2
	√	√√√√√		√√
Purposeless	Vacillating	Usually Purposeful	Effectively motivated	Highly motivated

M (5) indicates the most common or modal behavior of the pupil as shown by the agreement of five of the eight teachers reporting. The location of the numerals to the left and right indicates that one teacher considers the pupil *vacillating* and that two teachers consider him *highly motivated*. If preferred, the subject fields or other areas of relationship with the pupil may be used to replace the numerals.

1. MOTIVATION	Purposeless	Vacillating	Usually Purposeful	Effectively motivated	Highly motivated
2. INDUSTRY	Seldom works even under pressure	Needs constant pressure	Needs occasional prodding	Prepares assigned work regularly	Seeks additional work
3. INITIATIVE	Merely conforms	Seldom initiates	Frequently initiates	Consistently self-reliant	Actively creative
4. INFLUENCE AND LEADERSHIP	Negative	Co-operative but retiring	Sometimes in minor affairs	Contributing in important affairs	Judgment respected—makes things go
5. CONCERN FOR OTHERS	Indifferent	Self-centered	Somewhat socially concerned	Generally concerned	Deeply and actively concerned
6. RESPONSIBILITY	Unreliable	Somewhat dependable	Usually dependable	Conscientious	Assumes much responsibility
7. INTEGRITY	Not dependable	Questionable at times	Generally honest	Reliable, dependable	Consistently trustworthy
8. EMOTIONAL STABILITY	Hyperemotional / Apathetic	Excitable / Unresponsive	Usually well-balanced	Well-balanced	Exceptionally stable

Significant school activities and special interests or abilities. List membership and offices held in school activities.

Significant limitations (physical, social, mental):

Additional information which may be helpful, such as probable financial needs or work experience:

Principal's Comments and Recommendations

1. Specific statement concerning the applicant's fitness for acceptance by this college or employer:

2. Principal's estimate of applicant's future success, based on the purpose of this application.

☐ Little success ☐ May encounter some difficulty ☐ Average ☐ Above average ☐ Superior

3. Specific recommendation ☐ Recommended ☐ Not recommended for this college or position ☐ Prefer not to make recommendation

Date _____ Signature _____ Title _____

This **Standardized Form** prepared and recommended for national use by the Joint Committee on School-College Relations of the National Association of Secondary-School Principals (NASSP) and American Association of Collegiate Registrars and Admissions Officers (AACRAO).

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Reverse side of *Secondary-School Record*, size 8½" x 11". Also available with *Secondary-School Record* — on reverse side

Junior High School Record

Name, in full _____ Sex _____
Last Name First Name Middle Name M. or F.

Home Address _____
Number and Street City Zone State

Birth Date _____ Name of Parent or Guardian _____

Entered { _____ Name of School / _____ Location of School } Entrance Date _____ Month Year { Completed JHS / Will complete JHS / Withdrew } _____ Month Year

Explain irregular class periods:

Class periods are _____ minutes, _____ times a week, _____ weeks a year. Passing mark is _____

1. Describe your marking system if unusual: _____
2. List other junior high schools attended: _____

CLASS RECORD

If no marks are given, check. Circle marks or checks for half-year subjects.

Subject	Grade → / Year →	7 19	8 19	9 19	10 19	Extra	Exam	Units* or Credits
English								
Lang.								
Math.								
Science								
Soc. Studies								
Other Subjects								

Notes

Specify laboratory periods, variations in time allowance for subjects, or any other information needed to interpret this record. Such other information as Regents grades, Special Examinations, and record of a fifth year may be entered in the Extra or Exam columns. If a school does not use marks, enter here an estimate of success achieved.

*A unit represents the study of a subject a full school year four or five periods a week, or the equivalent. One unit equals two credits, unless defined otherwise.

TEST RECORD

	Grade 7				Grade 8				Grades 9 and 10			
	Test	Score	%-ile	Basis*	Test	Score	%-ile	Basis*	Test	Score	%-ile	Basis*
Mental Ability												
Reading												
Others												

*Give basis on which percentiles were computed. Include any available interpretation of tests on an enclosure.

Applicant ranks _____ in class of _____ students.

Date _____ Signature _____ Title _____

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Standard size, 8½" x 11"—bond paper. Also available with *Personality Record* on reverse side.

SECONDARY-SCHOOL RECORD FORMS

1. THE SECONDARY-SCHOOL RECORD—2 sides

This revised form has been in use throughout the country for many years and appears on many admission applications of colleges. It is printed on a good quality of bond paper, standard size, 8½ x 11 inches. This school form is used by thousands of secondary schools in transmitting the school record of students to other schools, to colleges, and to employers. The reverse side contains the *Personality Record* described below.

2. SECONDARY-SCHOOL RECORD—1 side

This form is one side of the above with the reverse side blank. It is the side upon which is entered the school record of the student.

3. THE PERSONALITY RECORD—1 side

This form is on the other sides of the *Secondary-School Record* and of the *Junior High-School Record*. It is also available as a separate form, size 8½ x 11 inches, with reverse side blank. Many schools use the separate *Personality Record* form in obtaining a rating of each student yearly by their teachers for the *Cumulative Personnel Record* of the student.

4. THE JUNIOR HIGH-SCHOOL RECORD—2 sides

This record form is for grades 7, 8, and 9 with an extra column to be used for an extra year or for the average of the subject marks for the three years. It is printed on a good quality of bond paper. This form is used in transmitting the school records of junior high-school pupils to the senior high school, or of junior high-school pupils moving from one school system to another. The reverse side contains the *Personality Record*.

5. THE JUNIOR HIGH-SCHOOL RECORD—1 side

This form is one side of the one immediately above with the reverse side blank. It contains the subject record of the junior high-school student.

6. THE PERMANENT AND SCHOLASTIC RECORD—2 sides

This is a record form covering ten semesters with a record of subjects by years. It includes a record of student activities, intelligence and achievement test scores, attendance, personal traits, and family history. It is flexible cardboard, 5 x 8 inches, with *Scholastic Record* on reverse side. It is available for vertical filing and is used as a cumulative record card.

PRICES ON QUANTITY LOTS

Quantity	*One Side*	*Two Sides*
1–99	$ .05 each	$ .05 each
100–499	2.50 per C	3.00 per C
500–999	2.00 per C	2.50 per C
1,000 or more	1.50 per C	2.00 per C

OZALID PAPER

For special translucent paper copying machine only.
Only numbers 2, 3, and 5 above available.

Quantity	*Price*
300 (minimum order)	$19.00
500	27.00
1,000	47.00

PERMANENT RECORD

School _____ City _____

Last Name | First Name | Middle Name | Sex | Race | Birthplace | Month | Day | Year

Entered from | Date | Age | Class | Curriculum | Adviser

Parent or Guardian | Occupation | Nationality | Address | Telephone No.

EXTRA CLASS ACTIVITIES

Date	Activity	Honors or Offices	Pts. Crs.

INTELLIGENCE-TEST RECORD

Date	Name of Test	Form	Score	%-ile Rank	MA	CA	IQ

ACHIEVEMENT-TEST RECORD

Date	Name of Test	Form	Score	Class Norm.	%-ile Rank	Subject Age

Was Graduated Date Rank No. in Class

Left Date Reason

ATTENDANCE RECORD

Semester	1	2	3	4	5	6	7	8	9	10	Totals
Days Present											
Days Absent											
Times Tardy											

PERSONALITY RECORD

Symbols: (1) High; (2) Above Av.; (3) Av.; (4) Below Av.; (5) Low

	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.	Summary
Motivation						
Industry						
Initiative						
Influence & Leadership						
Concern for Others						
Responsibility						
Integrity						
Emotional Stability						

General Health

Significant Limitations

Home conditions Parents Living No. Brothers No. Sisters

Vocational Preferences

College or Position Date

Credits Sent to Date

Standard size, 5" x 8"; flexible cardboard.

Standard size, 5" x 8"; flexible cardboard.

Name

SCHOLASTIC RECORD

	Gr.	9	10	11	12	Extra	No. Wks.	Credits
Subject	Yr.	19 1S 2S	19 1S 2S	19 1S 2S	19 1S 2S	19 1S 2S		
English								
Lang.								
Math.								
Science								
Soc. Studies								
Other Subjects								

Notes

Specify laboratory periods, variations in time allowance for subjects, or any other information needed to interpret this record. Such other information as Regents grades, College Boards and record of a fifth year may be entered in the Extra column. If a school does not use marks, enter here an estimate of success achieved.

Reverse side of *Permanent Record* card; size 5" x 8"; flexible cardboard.

SPECIAL PRINTING—*Your Institution!*

Special orders can be placed for printing with the name and address of your institution (high school or college) in place of the *Secondary-School Record* heading at the top center on the following forms (See sample form below):

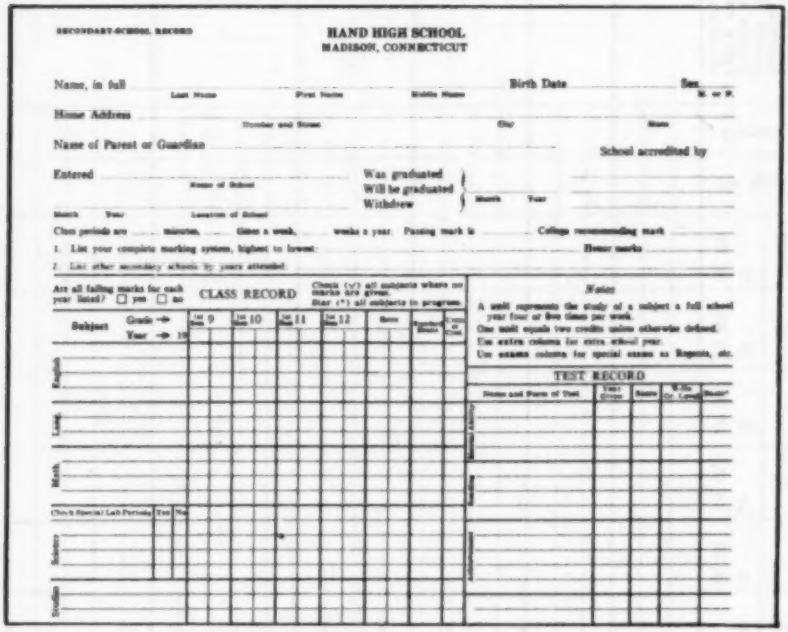
Secondary-School and Personality Record—2 sides
(Secondary-School Record on one side and Personality Record on reverse side)

Personality Record—1 side

Junior High-School and Personality Record—2 sides
(Junior High-School Record on one side and Personality Record on reverse side)

Junior High-School Record—1 side

These special orders will require about 20 days for delivery. Shipping charges will be added unless payment accompanies the order.



SECONDARY-SCHOOL RECORD

HAND HIGH SCHOOL
MADISON, CONNECTICUT

Name, in full ..... Birth Date ..... Sex M. or F.
Last Name — First Name — Middle Name

Home Address ..... Number and Street — City — State

Name of Parent or Guardian ..... School accredited by

Entered ..... Name of School — Was graduated / Will be graduated / Withdrew — Month ..... Year .....

Month — Year — Location of School

Class periods are ..... minutes, ... times a week, ... weeks a year. Passing mark is ..... College recommending mark .....

1. List your complete marking system, highest to lowest: ..... Honor marks .....

2. List other secondary schools by years attended: .....

Are all failing marks for each year listed? ☐ yes ☐ no

CLASS RECORD

Check (✓) all subjects where no marks are given.
Star (*) all subjects in progress.

Subject	Grade → / Year →	1st Sem. 9	2nd Sem. 9	1st Sem. 10	2nd Sem. 10	1st Sem. 11	2nd Sem. 11	1st Sem. 12	2nd Sem. 12	Aver.	Number Absent	Times Tardy
English												
Lang.												
Math.												
Check Special Lab Periods	Yes / No											
Science												
Studies												

Notes

A unit represents the study of a subject a full school year four or five times per week.
One unit equals two credits unless otherwise defined.
Use extra columns for extra school year.
Use **exams** columns for special exams as Regents, etc.

TEST RECORD

Name and Form of Test	Year Given	Score	Whether for Entrance	Percentile
Mental Ability				
Reading				
Achievement				

PRICES WITH NAME AND ADDRESS

Quantity	*One Side*	*Two Sides*
300 (minimum order)	$14.00	$16.00
500	16.00	20.00
1,000–4,000	20.00 per M	22.00 per M
5,000 or more	15.00 per M	20.00 per M

All forms are copyrighted by the National Association of Secondary-School Principals and may not be duplicated in any form.

THE CUMULATIVE PERSONNEL RECORD

This new *Cumulative Personnel Record form* was designed by a committee that made a thorough study of cumulative record forms in use in secondary schools throughout the country and by industrial and business employers. It provides a simple and practical form for all youth in the school, beginning with the seventh grade and extending over a 7-year period.

Three styles of *Cumulative Personnel Records* are available, all containing the same items, complete for any school.

Card style—

size, 9 x 11½ inches, printed on both sides.

Standard folder style—

size, 9½ x 11¾ inches, printed on inside and reversible.

Envelope style—

size, 9½ x 11¾ inches, printed on both sides.

PURPOSES SERVED

The *Cumulative Personnel Record* has been devised to meet these criteria:

1. It is cumulative, showing inter-relationship among items and developmental trends from year to year.
2. Data are easily and legibly entered.
3. Information is concrete, specific, and objective.
4. It can be easily read and readily interpreted.
5. It is adaptable to the various types of school organizations.
6. It includes minimum data to which may be added other desired guidance records.

Information is included on such factors as:

1. Personality and family background.
2. Health and physical characteristics.
3. Achievement as indicated by teachers' marks and standardized and informal tests.
4. Interests and activities—in- and out-of-school (offices, honors, hobbies, camping, scouting, athletics, special talents, *etc.*).
5. Work experience.
6. Educational and vocational plans.
7. Suggestions for guidance.

Quantity	*Cards*	*Folder*	*Envelope*
1–99	$ .05 each	$ .10 each	$ .10 each
100–499	3.00 per C	6.00 per C	5.00 per C
500–999	2.75 per C	5.00 per C	4.00 per C
1,000 or more	2.50 per C	4.50 per C	3.00 per C

CUMULATIVE PERSONNEL RECORD

Copyright 1946 NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS 1201 SIXTEENTH STREET N W WASHINGTON 6 D C

CHILD No # | SEX

PRINT: LAST NAME | FIRST & MIDDLE | DATE & PLACE OF BIRTH | EVIDENCE

7	8	9	10			
YEAR						
GRADE						
AGE AS OF SEPT 1						
HOME ADDRESS						
HOME TELEPHONE						
TOTAL DAYS OF SCHOOL						
TOTAL DAYS ABSENT						
TOTAL TIMES LATE						
SCHOOL ATTENDED						
COUNSELLOR						

TOTAL CREDITS BY SUBJECTS

UNITS CRED	UNITS CRED	UNITS CRED	ACADEMIC ACHIEVEMENT	UNITS CRED	UNITS CRED	UNITS CRED	UNITS CRED
			ENGLISH — ENGLISH				
			LANGUAGE				
			MATHEMATICS				
			SCIENCE				
			SOCIAL STUDIES — SOCIAL STUDIES				
			OTHER SUBJECTS				
			HEALTH & PHYSICAL ED.				
			WEEKS PASSED / WEEKS FAILED / AVERAGE / TOT UNIT CREDITS				

TEST	MO	SCORE%	ILE	TEST	MO	SCORE%	ILE	TEST	MO	SCORE%	ILE	TEST RECORD	TEST	MO	SCORE%	ILE	TEST	MO	SCORE%	ILE	TEST	MO	SCORE%	ILE	TEST	MO	SCORE%	ILE
												ACADEMIC APTITUDE USE MA & I Q IF PREFERRED																
												READING																
												ACHIEVEMENT & OTHER TESTS																

2. INDUSTRY

			ACHIEVEMENT & OTHER TESTS				
			PERSONALITY ESTIMATE: 2. INDUSTRY				
			3. INITIATIVE				
			4. INFLUENCE & LEADERSHIP				
			5. CONCERN FOR OTHERS				
			6. RESPONSIBILITY				
			7. INTEGRITY				
			8. EMOTIONAL STABILITY				
			HEALTH — SIGNIFICANT HEALTH CHARACTERISTICS				
			WORK — HOURS, KINDS, EARNINGS				
			INTERESTS & ACTIVITIES — IN AND OUT OF SCHOOL, SUMMERS, E.G., ATHLETICS, CAMPING, HOBBIES, SCOUTING, CLUBS, ETC.				
			TESTS VS. ACCOMPLISHMENT — DATA EXPLAINING EXTREME VARIANCE BETWEEN TESTING RESULTS & ACTUAL ACHIEVEMENT IN CLASS				
			PLANS — EDUCATIONAL & VOCATIONAL				

PHOTO & DATE

GUIDANCE NOTES

SCHOOL LEAVING: DATE & REASONS

POST-SCHOOL DATA

PHOTO & DATE

FATHER—GUARDIAN: COMPLETE NAME, OCCUPATION, EDUCATION

MOTHER: COMPLETE NAME, EDUCATION, EDUCATION

BROTHERS: NAMES & BIRTHDATES

SISTERS: NAMES & BIRTHDATES

LANGUAGE SPOKEN AT HOME

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OCCUPATIONAL ADJUSTMENT AND PLACEMENT FORMS

The task of aiding youth to become better adjusted occupationally is one of the most difficult jobs that confront American secondary schools. In order to aid those schools which are sincerely interested in trying to undertake this very important duty, the National Association of Secondary-School Principals' Implementation Commission, through a special staff, conducted a study in six secondary schools, the outgrowth of which was a plan for conducting a follow-up study of school-leavers and graduates. This plan was used in approximately 200 schools, and, through experiences gained in the application of the plan in these schools, the four forms, which are reproduced in part on the four following pages were prepared. Following is a description of each of these forms:

1. *Post-School Inventory,* Form AA, (3 pages, 8½ x 11)

This form is suitable for a survey of students at the end of one-, three-, and five-year periods after leaving school. The *Inventory* contains 22 major objective items of tested value with pre-coded responses to be checked by youth. Analyses of the occupational pursuits of post-school youth afford inferences about the school's effectiveness.

2. *Follow-Up Interview Schedule,* Form BB, (4 pages, 8½ x 11)

This form of 27 short specific questions is used to ascertain youth's appraisal of his job situation and his plan for his occupational future.

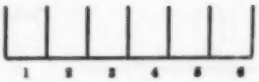
3. *Employer Interview Schedule,* Form CC, (2 sides, 8½ x 11)

This card is a convenient schedule of 38 short major questions with provisions for checking pre-coded responses, for learning from the employer how well the youth adjusted himself to his job, and how the school can prepare the youth more *effectively* for his work. The *Schedule* is invaluable in the school's efforts to improve its program of preparation for employment.

4. *Follow-Up Record Card,* Form DD, (2 sides, 5 x 8)

Certain essential school and home background data (27 major items), collected while the youth was in school, are put on his *Follow-Up Record Card,* to which all information collected about the youth's post-school occupational life is added. This cumulative record is used advantageously for post-school counseling and placement of youth and has provisions for group analysis.

Prices of the Forms	*Quantity*	*Price*
Post-School Inventory (AA)	1–99	$ .05 each
Follow-Up Interview Schedule (BB)	100–499	3.00 per C
Employer Interview Schedule (CC)	500–999	2.50 per C
Follow-Up Record Card (DD)	1,000 or more	2.00 per C



Form AA

The Implementation Commission of the National Association of Secondary-School Principals

POST-SCHOOL INVENTORY

Name Mr. / Mrs.* / Miss _____ (Print in capitals) Present Address _____ Street and Number

* Married Girls _____ (Write maiden name here) City State

Phone _____ (If no phone, write "none") Date _____ (Date this is filled in)

Directions: Please answer the following questions carefully. Most of the questions can be answered by placing a check "X" in the appropriate square. On some the answers will have to be written. These questions can be answered in one or two words or a few short sentences. Please write plainly.

All replies will be treated as strictly confidential.

1. What is your present employment status?
(Check "X" one)
1 ☐ Employed full-time *(30 or more hours per week)*
2 ☐ Employed part-time *(less than 30 hours per week)*
3 ☐ Doing housework at home, not otherwise employed, and *not seeking outside employment.*
4 ☐ Unemployed, and seeking work
5 ☐ Unemployed, and not seeking work
6 ☐ Going to school full time
7 ☐ Taking compulsory military training *(Under Selective Service Act)*
8 ☐ Serving a regular enlistment in the Army, Navy, Marines, or other armed forces of the U. S.
9 ☐ Other *(Explain)* _____

2. In what employment or placement agencies are you now registered. If any?
(If not registered in any agency now, write "none.")
(1) Name _____
Address _____
(2) Name _____
Address _____

3. How many months of full-time schooling have you had since you left high school? _____

4. At what schools or colleges have you studied or taken training since you left high school, if any?

NOTE: If you have taken any training since you left high school, fill in the following information for each school from which you took work. Be sure to indicate any training you are taking at the present time. If you have not taken any training since leaving high school, cross out the table below and go on to Item 5.

Name and address of school	Name of course taken	Dates attended	Type of attendance *Check "X" one*	Reason for leaving *(If still attending give expected date of leaving instead.)*
First school attended		From: / To:	1 ☐ Full-time 2 ☐ Part-time 3 ☐ By mail	
Second school attended		From: / To:	1 ☐ Full-time 2 ☐ Part-time 3 ☐ By mail	

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The Implementation Commission of the National Association of Secondary-School Principals

FOLLOW-UP INTERVIEW SCHEDULE

Name Mr. / Mrs.* / Miss ..... *(Print in capitals)*

* Married Girls ..... *(Write maiden name here)*

Present Address ..... *Street and Number*

..... *City* *State*

Phone ..... *(If no phone, write "none")*

Date ..... *(Date this is filled in)*

Name of Interviewer .....

Position .....

SECTION I. EMPLOYED YOUTH

(If the youth is employed full or part-time at present, ask the questions in Section I relative to his present job.

If this section does not apply to the youth being interviewed, encircle one of the following statements and go immediately to Section II.)

1 This youth is unemployed at present.
2 This youth is a housewife.
3 This youth is a full-time student.

1. What do you like most and what do you dislike most about your present job?

Like	*Dislike*	
1	1	Nothing
2	2	Entire job
3	3	Certain duties or aspects of the job (monotony, routine, etc.)
4	4	Salary
5	5	Fellow workers
6	6	Superior or "boss"
7	7	Working conditions
8	8	Future opportunities
9	9	Independence and responsibilities provided by the job and vice versa
10	10	Uncertain
11	11	Other (*Explain*) .....

2. What things chiefly have you learned from your job?

1 Nothing or uncertain
2 Specific tasks or skills related to job
3 Has acquired greater skill
4 To meet and work with people
5 To be a better, all-round worker
6 To accept independence and responsibility
7 About things worked with
8 Other (*Explain*) .....

3. Do you feel that you can do everything that is required on this job?

1 Yes 2 No 3 Uncertain

4. Do you feel that you will be able to keep this job as long as you want it?

1 Yes 2 No 3 Uncertain

5. Do you feel capable of holding down a better job than this one without further training?

1 Yes 2 No 3 Uncertain

6. Do you think you are getting paid what you are worth on this job?

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The Implementation Commission of the National Association of Secondary-School Principals — Form CC

EMPLOYER INTERVIEW SCHEDULE

Name of Youth _____ Date _____ Interviewer _____
Last First Middle

Name of Employer _____ Address _____
Street and Number City State

Person Interviewed _____ Position _____

1. Job title of youth _____

2. Work done by youth:

3. How did you happen to hire this youth for this job?

a. Because of what quality in particular?

b. Because of what source of contact in particular?

4. *(If the youth is not working for this employer now.)* Why isn't the youth working here any longer?

5. Did he ever send you a letter of application? 1 Yes 2 No

6. *(If "Yes" to 5)* Was it of any value in helping him to get the job?
1 Yes 2 No

7. *(If "No" to 5)* Would a letter of application have made it easier for him to get the job?
1 Of no value 2 Of some value

8. Did you require him to fill in any forms in applying for the job?
1 Yes 2 No

9. *(If "Yes" to 8)* What was your impression of his efforts? *(Encircle everything mentioned.)*

Good		Bad
1	Neatness	1
2	Legibility	2
3	Accuracy	3
4	Completeness	4
5	Other *(Specify)*	5

10. Does he follow directions quickly and accurately?
1 Yes 2 No

11. Does he produce work of the amount and kind that you believe he should?
1 Yes 2 No

12. How quickly did he learn to perform his duties relative to the average employee?
1 Very quickly
2 In a satisfactory length of time
3 Very slowly

13. How long did it take him to learn his job?

14. How well does he maintain his poise or self-control at his work?
1 Exhibits a high degree of self-control
2 Loses control only occasionally
3 Frequently loses control of himself

15. Has the youth made the most of his opportunities here? In what way?

16. If business should go downhill would he be among the first or the last to be let go?

17. What determines your policy here?
1 Seniority of employment
2 Merit
3 Combination of above
4 Other *(Specify)* _____

18. How does he take criticism?
1 Accepts comments in good spirit and attempts to profit from them
2 Attempts to profit from comments but shows resentment at criticism
3 Accepts comments in apparently good spirit but makes no attempt to profit from them
4 Accepts comments in a disgruntled way and makes no effort to profit from them

19. How does he get along with his fellow workers?
1 Is popular and respected
2 Is respected but is not popular with them
3 Is popular but is not respected
4 Is neither popular nor respected

20. Does this youth have to meet and deal with customers?
1 Yes 2 No

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DECEASED	NAME	SEX	RACE	LEFT SCHOOL MON.	LEFT SCHOOL YEAR	AGE LEFT	GRADE COMP.	CURRICULUM	SCHOLARSHIP	MENTAL ABILITY	EDUC. CHOICE	OCCUP. CHOICE	OCCUP. FATHER	1	2	3	4	5	6

Form DD

FOLLOW-UP RECORD CARD

NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS

FOLLOW-UP (INV.) 1 3 5 1 3 5

Name _____ (LAST) _____ (FIRST) _____ (MIDDLE) Phone _____ Date of Birth _____

Address _____ (STREET AND NUMBER) _____ (CITY OR TOWN) _____ (STATE) Place of Birth _____

Name of Parent _____

Curriculum _____ Address of Parent _____

Chosen Occupation _____ Birth Places of Parents _____ (FATHER) _____ (MOTHER)

Reason for leaving H.S. _____ Remarks _____

FURTHER TRAINING

NAME AND ADDRESS OF SCHOOL	COURSE TAKEN	ATTENDANCE	INCLUSIVE DATES		REASON FOR LEAVING

	FIRST YEAR	THIRD YEAR	FIFTH YEAR
Expected Occupation			
Sources of Advice			
Most Valuable Subject			
Suggestions			

(18) WEEKLY WAGES 1 3 5

(9) HOURS WORKED PER WEEK 1 3 5

(8) EMPLOYER TRAINING 1 3 5

(7) OCCUPATION 1 3 5

(1) EMPLOYMENT STATUS 1 3 5

(2) EMPLOYMENT AGENCIES 1 3 5

(3) MONTHS OF SCHOOLING 1 3 5

(6) MONTHS FULL-TIME EMPLOYMENT 1 3 5

(5) MONTHS ON PRESENT JOB 1 3 5

(5) KIND OF BUSINESS 1 3 5

(5) NUMBER OF EMPLOYERS 1 3 5

(5) INITIAL UNEMPLOYMENT 1 3 5

(4) KIND OF ATTENDANCE 1 3 5

(4) SCHOOL ATTENDED 1 3 5

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